

FLOOD INSURANCE STUDY



ORIGINAL

COMPLETED
76

**LONOKE COUNTY,
ARKANSAS**
UNINCORPORATED AREAS



MAY 17, 1982



Federal Emergency Management Agency

COMMUNITY NUMBER -050448

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PUBLISHED SEPARATELY:

Flood Insurance Rate Map Index

Flood Insurance Rate Map

FLOOD INSURANCE STUDY
LONOKE COUNTY, ARKANSAS

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study investigates the existence and severity of flood hazards in Lonoke County, Arkansas, and aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This study will be used to convert Lonoke County to the regular program of flood insurance by the Federal Emergency Management Agency (FEMA). Local and regional planners will use this study in their efforts to promote sound flood plain management.

In some states or communities, flood plain management criteria or regulations may exist that are more restrictive or comprehensive than those on which these Federally-supported studies are based. These criteria take precedence over the minimum Federal criteria for purposes of regulating development in the flood plain, as set forth in the Code of Federal Regulations at 44 CFR, 60.3(d). In such cases, however, it shall be understood that the state (or other jurisdictional agency) shall be able to explain these requirements and criteria.

1.2 Authority and Acknowledgements

The source of authority for this Flood Insurance Study is the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

The hydrologic and hydraulic analyses for this study were performed by Garver & Garver, Inc., for the Federal Emergency Management Agency, under Contract No. EMW-C-0063. This study was completed in April 1981.

1.3 Coordination

Streams requiring detailed study were identified at a meeting attended by representatives of the study contractor, the FEMA, and representatives of Lonoke County in May 1979.

On December 16, 1981, the results of the study were reviewed at the final meeting attended by representatives of the study contractor, FEMA, and county officials. The study was acceptable to the county.

2.0 AREA STUDIED

2.1 Scope of Study

This Flood Insurance Study covers the unincorporated areas of Lonoke County, Arkansas. The area of study is shown on the Vicinity Map (Figure 1).

The limits of detailed and approximate studies in Lonoke County were determined by the FEMA with community and study contractor consultation at the meeting in May 1979.

The detailed study limits on Fourmile Creek extend from its mouth to the Lonoke-Faulkner County line. The detailed study limits on Magness Creek extend from its mouth to the Lonoke-Faulkner County line. The detailed study limits on Hudson Branch Creek extend from its mouth to East Main Street east of Cabot. On Bayou Two Prairie near Cabot the detailed study limits extend from First Street to Arkansas State Highway 5. On Bayou Two Prairie Tributary near Cabot the detailed study limits extend from its mouth to a point located approximately 150 feet upstream from Arkansas State Highway 89. On White Oak Branch the detailed study limits extend from First Street to Arkansas State Highway 5. The detailed study limits on Bayou Meto extend from Interstate Highway 40 to the Lonoke-Pulaski County line. On Bayou Two Prairie near Carlisle, the detailed study limits extend from a point located approximately 8,300 feet downstream from Arkansas State Highway 13 to a point located approximately 150 feet upstream from Arkansas State Highway 70. The detailed study limits on North Bayou extend from Scroggins Avenue to a point located approximately 3,300 feet upstream from Arkansas State Highway 161.

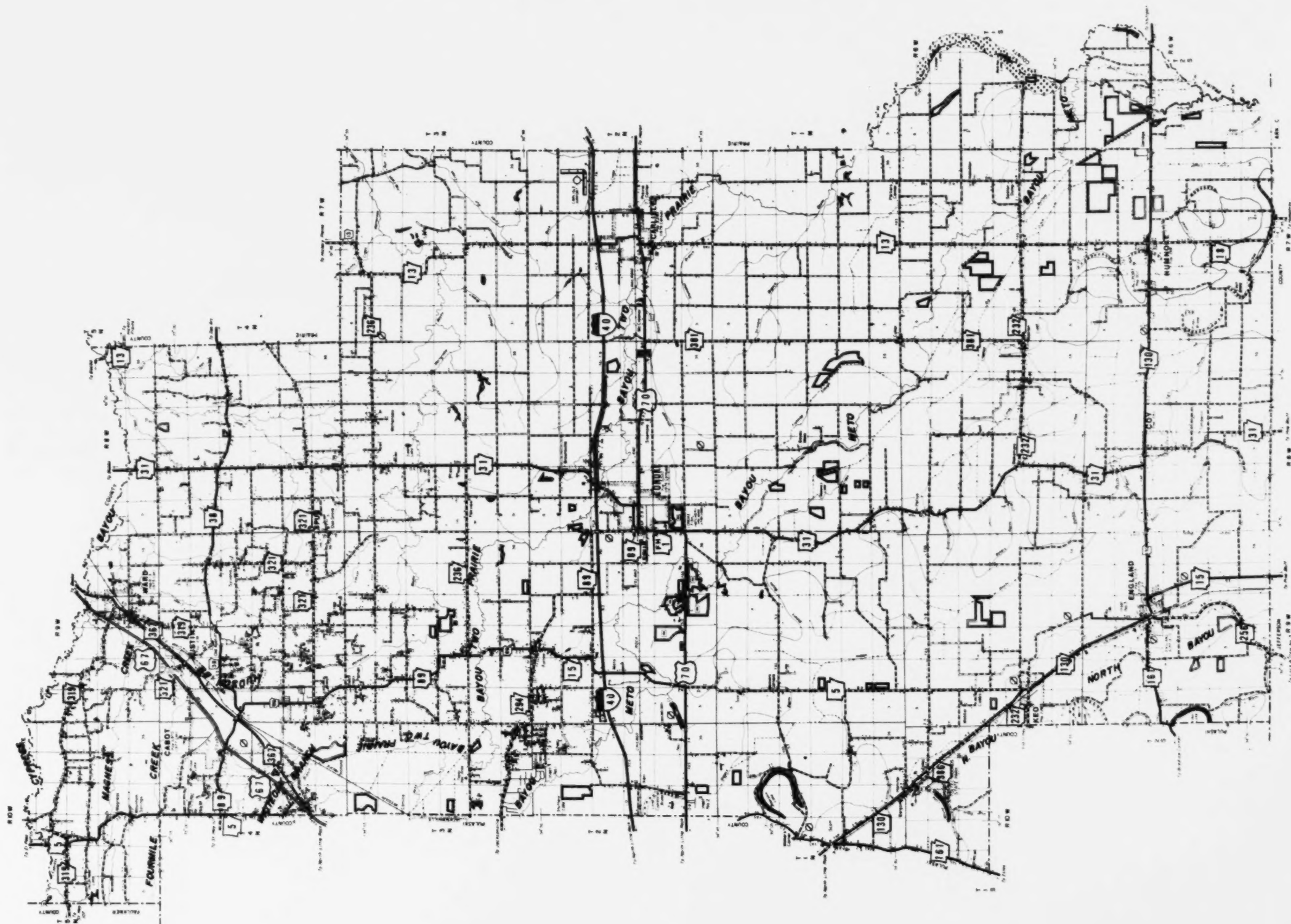
The areas studied by detailed methods were selected with priority given to all known flood hazard areas, and areas of projected development or proposed construction for the next five years, through April 1986. Approximate analyses were used to study those areas having a low development potential or minimal flood hazards.

2.2 Community Description

Lonoke County is located in the central part of Arkansas. It is bounded on the north by Cypress Bayou and White County, on the east by Prairie County, on the south by Jefferson County, and on the west by Pulaski County. Lonoke County is served by Interstate Highway 40, U. S. Highways 67-167, and 70, the Missouri-Pacific, Chicago, Rock Island, and Pacific, and the St. Louis-Southwestern Railroads, and several State and County roads.

Lonoke County was established April 16, 1873, from territory taken from Pulaski and Prairie Counties. It was named for a "Lone Oak" tree which stood on the site of the present County seat and was used as a surveyor's landmark.

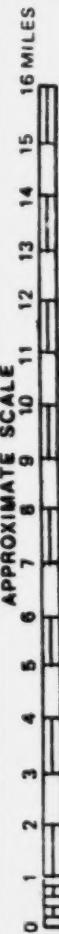
Lonoke County has grown steadily since its settlement. A U. S. Census Bureau 1980 Census showed a population of 34,518, an increase



FEDERAL EMERGENCY MANAGEMENT AGENCY

LONOKE COUNTY, AR
(UNINCORPORATED AREAS)

APPROXIMATE SCALE



VICINITY MAP

FIGURE 1

of 8,269 over the 1970 Census (Reference 1). Several industries and commercial establishments are located near Cabot and Lonoke. However, the greatest part of the income for the County is from agriculture. Cotton, soybeans, rice, and fish are the principle products.

Lonoke County has an average annual temperature of about 60°F, with a minimum of 5°F in winter and a maximum of 99°F in summer. Annual rainfall averages about 47 inches (Reference 2).

Soils in the northwest corner of the County are loamy soils that are well drained on gently sloping to steep foot slopes, sides, and tops. The remaining portion of the northern half of the County is comprised of loamy soils that range from poorly to well drained on nearly level to strongly sloping uplands. The southern half of the County is comprised of clayey and loamy soils that range from poorly to well drained on level to undulating bottom land (Reference 3).

2.3 Principal Flood Problems

The major flooding problems in Lonoke County are a result of the flat slopes in the area. As a result, the area is subjected to problems of frequent floodwater and sediment damage to crops and pasture, impaired drainage and waterlogged soils. Developments in the County are located mainly along ridges and on high ground and have few flooding problems except for inadequate facilities for runoff drainage.

Serious flooding occurred in Lonoke County in April 1927, May 1968, and in February 1969.

The streams in Lonoke County generally have flat slope and a moderate to severe degree of channel meandering. These sluggish streams encourage vegetation growth and sedimentation which further reduce flow velocities and serves to increase flood depths and duration of flooding. Many bridge openings are not adequate to pass even the lower flood flows without flooding the surface of the roadway.

2.4 Flood Protection Measures

No significant flood protection measures have been implemented in the stream segments studied in detail. Some isolated reaches of these streams have been cleaned and straightened.

3.0 ENGINEERING METHODS

For the flooding sources studied in detail in the community, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. Flood events of a magnitude which are expected to be equalled or exceeded once on the average during any 10-, 50-, 100-, or 500 year period (recurrence interval), have been selected as having special significance for flood plain management and for flood insurance premium rates. These events, commonly termed the 10-, 50-, 100-, and 500 year floods, have a 10, 2, 1, and 0.2 percent chance, respectively, of being

equalled or exceeded during any year. Although the recurrence interval represents the long term average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than one year are considered. For example, the risk of having a flood which equals or exceeds the 100-year flood (one percent chance of annual occurrence) in any 50-year period is about 40 percent (four in ten), and for any 90-year period, the risk increases to about 60 percent (six in ten). The analyses reported here reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

3.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish the peak discharge-frequency relationships for floods of the selected recurrence intervals for each flooding source studied in detail affecting the county.

Drainage areas along those streams studied in detail were measured from U. S. Geological Survey Topographic Maps at a scale of 1" = 2,000', with contours intervals of 5 and 10 feet (Reference 4).

Synthetic storms were computed to define the discharge-frequency for each stream studied in detail. Rainfall distribution for the 10-, 50- and 100-year frequencies were computed from rainfall-frequency data contained in the National Weather Service Technical Paper No. 40 (Reference 5). Snyder's coefficients were used to compute hydrographs. The hydrographs and rainfall distributions were used to compute synthetic storms of the desired frequencies from which the peak discharges were obtained. A log-probability relationship of the lower frequency peak discharges was used to compute each of the 500-year peak discharges.

For the streams studied in detail, peak discharges were computed at several locations along the stream from synthetic storms. Where a further transition of discharges was necessary, drainage area discharge curves were drawn from computed peak discharges and contributing drainage areas. Drainage areas were determined at the points selected for the transitional discharges and those areas used to pick the discharges from the appropriate drainage area-discharge curve.

Peak discharges immediately downstream of highway embankments on White Oak Branch and Bayou Two Prairie near Cabot were found to be less than computed synthetic storm peaks due to the effect of significant storage upstream of the embankments. Peak discharges on Bayou Meto were found to be less than computed synthetic storm peaks due to storage above Interstate 40 and the Lonoke-Pulaski County line. These differences were analyzed using HEC-1 storage-outflow routing (Reference 6).

The peak discharge-drainage area relationships for the selected recurrence intervals are presented in Table 1, "Summary of Discharges".

TABLE 1 - SUMMARY OF DISCHARGE

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs)			
		10-YEAR	50-YEAR	100-YEAR	500-YEAR
FOURMILE CREEK					
At Lower Limit of detailed study	39.1	5408	7370	8237	10035
At Confluence of Magness Creek	24.9	5200	7000	7820	9600
At Confluence of Hudson Branch Creek	15.4	4900	6500	7250	8800
At Arkansas Highway 321	14.1	4800	6375	7100	8600
At Arkansas Highway 5	6.8	4165	5416	5995	7100
At Upper Limit of detailed study	2.4	2623	3344	3693	4400
MAGNESS CREEK					
At Mouth	11.1	3809	5044	5600	6400
County Road at 24,000 feet above mouth	7.5	3900	4890	5370	6280
At Arkansas Highway 5	5.8	3522	4581	5071	6070
County Road approximately 6,000 feet upstream of Arkansas Highway 5	4.1	3060	3940	4370	5400
County Road appoximately 2,800 feet downstream of county line	3.3	2750	3510	3890	4850
At Upper Limit of detailed study	2.3	2252	2281	3183	3810
HUDSON BRANCH CREEK					
At Mouth	6.8	2854	3756	4165	5095
At 2,400 feet below Arkansas Highway 38	1.2	1589	2010	2218	2650
At 1,500 feet above Arkansas Highway 38	0.9	1400	1790	1970	2310
At 1,700 feet below East Main Street	0.6	1250	1600	1740	2050
WHITE OAK BRANCH					
At First Street	2.9	1343	1801	2024	2585
At Arkansas Highway 367	2.7	1377	1853	2063	2571
At U.S. Highway 67-167	2.5	1402	1888	2135	2749
At Arkansas Highway 5	1.7	1457	1997	2234	2750

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs)				
		10-YEAR	50-YEAR	100-YEAR	500-YEAR	
BAYOU TWO PRAIRIE NEAR CABOT						
At First Street	16.4	3478	5527	6430	8471	
At Arkansas Highway 367	16.0	3590	5573	6491	8608	
At U.S. Highway 67-167	14.4	3589	5548	6395	8527	
At Arkansas Highway 5	8.6	2684	4501	5057	6801	
At Mouth	2.7	2658	3401	3758	4498	
BAYOU TWO PRAIRIE TRIBU- TARY NEAR CABOT						
At Arkansas Highway 89	1.4	2121	2649	2921	3435	
NORTH BAYOU						
At Scroggins Street	14.1	2852	3831	4270	5320	
BAYOU TWO PRAIRIE NEAR CARLISLE						
At Lower Limit of detailed study	145.2	5460	7744	8371	11400	
BAYOU METO						
At Interstate Highway 40	169.7	7431	10553	12345	17089	
At Upper Limit of detailed study	155.2	6971	9894	11595	15969	

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of the flooding sources studied in detail in the county were carried out to provide estimates of the elevations of floods of the selected recurrence intervals along each of the flood sources.

Below water sections of channels, bridges, and culverts were obtained by field surveys. Additional information was obtained from topographic maps of the study area. Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles (Exhibit 1). For stream segments for which a floodway was computed (Section 4.2), selected cross section locations are also shown on the Flood Boundary and Floodway Maps (Exhibit 3).

The hydraulic analyses for this study were based on unobstructed flow. The flood elevations shown on the profiles are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

Channel Roughness coefficients (manning's "n") for streams in this study were estimated by field inspection. Roughness coefficients of 0.030 to 0.055 in the channel and 0.07 to 1.1 in the flood plains were used in all floods.

All elevations used in this study are referenced to National Geodetic Vertical Datum of 1929 (NGVD); the elevation reference marks used in this study are shown and described on the maps.

Water surface elevations of flood of the selected recurrence intervals were computed through use of the COE HEC-2 step-backwater computer program (Reference 7). Flood profiles were drawn showing computed water surface elevations for floods of the selected recurrence intervals (Exhibit 1). Flood water-surface profiles were published for all stream segments studied in detail. Starting water-surface elevations for the stream segments studied in detail were taken from a rating curve which was computed for the channel at the lower limit of the study. The computed profiles were checked for reasonableness by comparing them with existing highwater marks.

Water surface profiles were not developed for the approximate study streams.

4.0 FLOOD PLAIN MANAGEMENT APPLICATIONS

The National Flood Insurance Program encourages state and local governments to adopt sound flood plain management programs. Therefore, each Flood Insurance Study includes Flood Boundary and Floodway Maps designed to assist communities in developing sound flood plain management measures.

4.1 Flood Boundaries

In order to provide a national standard without regional discrimination, the 100-year flood has been adopted by the FEMA as the base flood for purposes of flood plain management measures. The 500-year flood is employed to indicate additional areas of flood risk in the county. For each stream studied in detail, the boundaries of the 100- and the 500-year floods have been delineated using the flood elevations determined at each cross section; between cross sections, the boundaries were interpolated using topographic maps at a scale of 1' = 1,000' with a contour interval of 1 to 2 feet. In cases where the 100- and the 500-year flood boundaries are close together, only the 100-year boundary has been shown.

For the streams studied by approximate methods, the boundary of the 100-year flood was transferred from the Flood Hazard Boundary Maps published for Lonoke County, Arkansas, by the FEMA (Reference 8).

The boundaries of the 100- and 500-year floods are shown on the Flood Boundary and Floodway Maps. Small areas within the flood boundaries may lie above the flood elevations, and, therefore, may not be subject to flooding. Owing to limitations of the map scale and/or lack of detailed topographic data, such areas are not shown.

4.2 Floodways

Encroachment on flood plains, such as artificial fill, reduces the flood-carrying capacity, increases the flood heights of streams, and increases flood hazards in areas beyond the encroachment itself. One aspect of flood plain management involves balancing the economic gain from flood plain development against the resulting increase in flood hazard. For purposes of the National Flood Insurance Program, the concept of a floodway is used as a tool to assist local communities in this aspect of flood plain management. Under this concept,

the area of the 100-year flood is divided into a floodway and a floodway fringe. The floodway is the channel of a stream plus any adjacent flood plain areas that must be kept free of encroachment in order that the 100-year flood may be carried without substantial increases in flood heights. Minimum standards of the FEMA limit such increases in flood heights to 1.0 foot, provided that hazardous velocities are not produced. The floodways in this report are presented to local agencies as minimum standards that can be adopted or that can be used as a basis for additional studies.

The floodways presented in this study were computed on the basis of equal conveyance reduction from each side of the flood plain. The results of these computations were tabulated at selected cross sections for each stream segment for which a floodway was computed (Table 2).

As shown on the Flood Boundary and Floodway Maps (Exhibit 3), the floodway widths were determined at cross sections; between cross sections, the boundaries were interpolated. In cases where the boundaries of the floodway and the 100-year flood are either close together or collinear, only the floodway boundary has been shown.

The area between the floodway and the boundary of the 100-year flood is termed the floodway fringe. The floodway fringe thus encompasses the portion of the flood plain that could be completely obstructed without increasing the water surface elevation of the 100-year flood more than 1.0 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to flood plain development are shown in Figure 2.

5.0 INSURANCE APPLICATION

In order to establish actuarial insurance rates, the FEMA has developed a process to transform the data from the engineering study into flood insurance criteria. This process includes the determination of reaches, Flood Hazard Factors (FHF's), and flood insurance zone designations for each significant flooding source affecting Leno County.

5.1 Reach Determinations

Reaches are defined as lengths of watercourses having relatively the same flood hazard, based on the average weighted difference in water surface elevations between the 10- and 100-year floods. This difference does not have a variation greater than that indicated in the following table for more than 20 percent of the reach.

<u>Average Difference Between 10- and 100-Year Floods</u>	<u>Variation</u>
Less than 2 feet	0.5 foot
2 to 7 feet	1.0 foot

Eleven reaches meeting the above criteria were required for the flooding sources of Leno County. The locations of the reaches are shown on the Flood Profiles and the Flood Insurance Rate Maps.

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY	INCREASE (FEET)
Fourmile Creek								
A	0.58	900	4,223	2.0	223.1	222.0 ⁴	223.0	1.0
B	7.82	417	3,743	2.2	227.5	227.5	228.1	0.6
C	8.49	205	2,288	3.6	227.9	227.9	228.4	0.5
D	20.40	700	3,095	2.5	234.6	234.6	234.8	0.2
E	22.13	693	4,709	1.7	235.5	235.5	236.0	0.5
F	33.45	800	4,325	1.7	243.3	243.3	243.7	0.4
G	35.55	800	5,249	1.4	244.2	244.2	244.7	0.5
H	41.28	113	1,125	6.3	252.0	252.0	252.0	0.0
I	41.69	500	3,990	1.8	252.9	252.9	252.9	0.0
J	69.33	600/475 ²	2,329	2.6	295.8	295.8	296.4	0.6
K	69.56	500/440 ²	2,536	2.4	296.9	296.9	297.2	0.3
L	76.53	450 ³	1,935	3.1	311.3	311.3	311.8	0.5
M	87.82	400	1,443	2.6	354.3	354.3	354.4	0.1
Magness Creek								
A	0.50	1,200	3,307	1.7	233.4	230.5 ⁴	231.2	0.7
B	8.95	550	2,538	2.2	239.5	239.5	240.1	0.6

¹ Thousands of Feet Above Mouth

³ Floodway Lies Outside County Limits

² Total Width/Width Within County Limits

⁴ Elevation Computed Without Consideration of Backwater Effects

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

LONOKE COUNTY, AR
(UNINCORPORATED AREAS)

FLOODWAY DATA

FOURMILE CREEK AND MAGNESS CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY	INCREASE (FEET)
Magness Creek (Con't)								
C	9.20	550	2,164	2.6	239.9	239.9	240.5	0.6
D	16.02	236	1,160	4.8	253.1	253.1	253.3	0.2
E	23.97	300	1,490	3.6	275.5	275.5	276.1	0.6
F	25.91	350	1,239	4.3	281.2	281.2	281.4	0.2
G	35.46	350	1,975	2.7	307.9	307.9	308.4	0.5
H	36.04	350	2,326	2.3	308.5	308.5	309.1	0.6
I	36.37	83	502	10.1	308.2	308.2	308.9	0.7
J	42.24	500	2,380	1.8	327.5	327.5	327.7	0.2
K	42.75	400	1,457	3.0	328.0	328.0	328.5	0.5
L	48.24	397	1,291	3.0	344.9	344.9	345.9	1.0
M	49.09	500	1,363	2.9	349.1	349.1	349.7	0.6
N	53.79	250	866	3.7	364.3	364.3	364.6	0.3
Hudson Branch Creek								
A	0.43	1,003	482	8.6	238.5	238.5	238.5	0.0
B	0.54	1,069	1,131	3.7	240.0	240.0	240.0	0.0

¹ Thousands of Feet Above Mouth

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

LONOKE COUNTY, AR
(UNINCORPORATED AREAS)

FLOODWAY DATA

MAGNESS CREEK
HUDSON BRANCH CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY	INCREASE (FEET)
Hudson Branch Creek (Con't)								
C	1.93	500	3,484	1.2	241.0	241.0	241.2	0.2
D	4.99	900/100 ²	1,221	3.4	243.2	243.2	243.3	0.1
E	5.69	900/100 ²	3,143	1.3	244.1	244.1	244.6	0.5
F	12.26	350	1,433	1.5	257.3	257.3	258.2	0.9
G	12.44	350	1,475	1.5	257.4	257.4	258.3	0.9
H	17.75	175	445	3.9	282.6	282.6	283.0	0.4
I	18.06	175	359	4.8	286.8	286.8	287.0	0.2

¹ Thousands of Feet Above Mouth

² Total Width/Width Within Corporate Limits

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

LONOKE COUNTY, AR
(UNINCORPORATED AREAS)

FLOODWAY DATA

HUDSON BRANCH CREEK

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BEST DOCUMENT AVAILABLE

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY	INCREASE (FEET)
White Oak Branch								
A	20.25	987	392	5.2	263.0	263.0	263.5	0.5
B	20.43	912	527	3.8	264.1	264.1	264.2	0.1
C	21.73	346	349	5.9	267.1	267.1	268.1	1.0
D	23.28	400	1,009	2.1	270.8	270.8	271.0	0.2
E	28.81	400	1,203	1.9	286.1	286.1	287.1	1.0
Bayou Two Prairie Near Cabot								
A	273.50	2,000	6,019	1.1	265.6	265.6	266.6	1.0
B	273.93	2,000	10,311	0.6	265.7	265.7	266.7	1.0
C	276.36	1507/1200 ²	1,570	4.1	266.4	266.4	267.3	0.9
D	279.44	950	4,096	1.6	270.2	270.2	270.9	0.7
E	288.32	225	1,325	3.8	280.9	280.9	281.7	0.8
Bayou Two Prairie Tributary Near Cabot								
A	0.44	700	1,797	2.1	272.7	271.5 ³	272.0	0.5
B	5.65	400	718	4.1	286.4	286.4	286.5	0.1
C	5.87	400	2,027	1.4	287.5	287.5	287.9	0.4

¹ Thousands of Feet Above Mouth³ Elevations Computed Without Consideration of Backwater Effects² Total Width/Width Within Corporate Limits

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

LONOKE COUNTY, AR
UNINCORPORATED AREAS

FLOODWAY DATA

WHITE OAK BRANCH, BAYOU TWO PRAIRIE NEAR CABOT
BAYOU TWO PRAIRIE TRIBUTARY NEAR CABOT

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY	INCREASE (FEET)
North Bayou								
A	14.68	900	2,602	1.6	220.9	220.9	221.9	1.0
B	21.59	800	2,181	2.0	224.0	224.0	224.6	0.6
C	25.10	800	3,156	1.4	226.1	226.1	227.0	0.9
Bayou Two Prairie Near Carlisle								
A	92.67	1,450	7,512	1.2	211.6	211.6	212.6	1.0
B	100.73	447	3,053	2.9	215.1	215.1	215.9	0.8
C	110.44	1,391	5,530	1.6	217.8	217.8	218.6	0.8
D	110.67	1,400	10,396	0.9	218.1	218.1	218.7	0.6
Bayou Meto								
A	122.43 ²	300	3,698	3.3	238.1	238.1	239.1	1.0
B	124.02 ²	500	6,283	2.0	240.6	240.6	241.4	0.8
C	128.11 ²	850	10,674	1.1	245.1	245.1	245.8	0.7
Bayou Two Prairie Near Lonoke³								
B	156.50	250	1,767	4.4	228.5	228.5	229.5	1.0
Pack Branch³								
A	3.8	250	1,037	1.9	230.3	230.3	231.2	0.9

¹ Thousands of Feet Above Mouth² Miles Above Mouth³ Information From City of Lonoke Flood Insurance Study

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

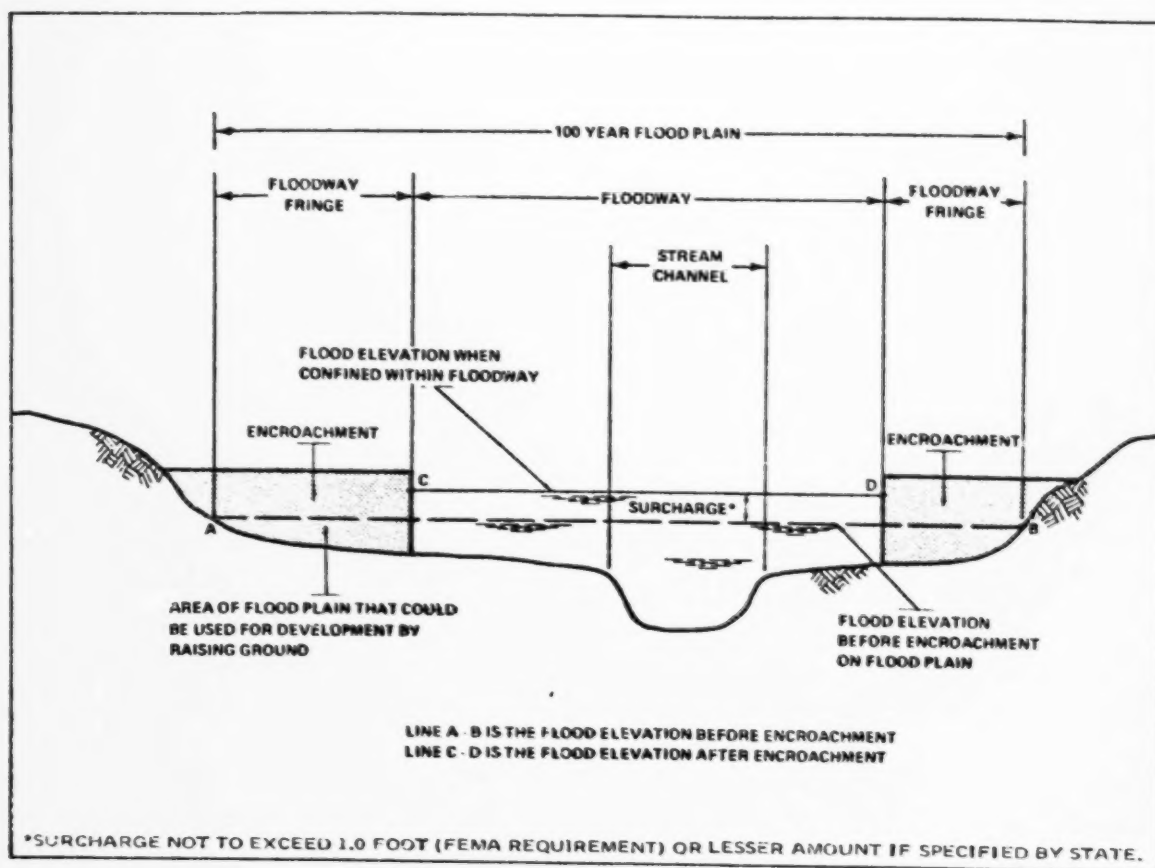
LONOKE COUNTY, AR
(UNINCORPORATED AREAS)

FLOODWAY DATA

NORTH BAYOU, BAYOU TWO PRAIRIE NEAR CARLISLE, BAYOU
METO, BAYOU TWO PRAIRIE NEAR LONOKE, PACK BRANCH

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BEST DOCUMENT AVAILABLE



FLOODWAY SCHEMATIC

Figure 2

5.2 Flood Hazard Factors (FHF's)

The Flood Hazard Factor is used to correlate flood information with insurance rate tables. Correlations between property damages from floods and their assigned FHF's are used to set actuarial insurance premium rate tables based on FHF's from 005 to 200.

The FHF for a reach is the average weighted difference between the 10- and 100-year flood water surface elevations expressed to the nearest one-half foot, and shown as a three-digit code. For example, if the difference between the water surface elevations of the 10- and 100-year floods is 0.7 foot, the FHF is 005; if the difference is 1.4 feet, the FHF is 015; if the difference is 5.0 feet, the FHF is 050. When the difference between the 10- and 100-year flood water surface elevations is greater than 10.0 feet, the accuracy for the FHF is to the nearest foot.

5.3 Flood Insurance Zones

After the determination of reaches and their respective FHF's, the entire area of Lonoke County was divided into zones, each having a specific flood potential or hazard. Each zone was assigned one of the following flood insurance zone designations:

- Zone A: Special Flood Hazard Areas inundated by the 100-year flood, determined by approximate methods, no base flood elevations shown or FHF's determined.
- Zones A1, A2, A3, A4 and A5: Special Flood Hazard Areas inundated by the 100-year flood, determined by detailed methods; base flood elevations shown, and zones assigned according to FHF's.
- Zone B: Areas between the Special Flood Hazard Areas and the limits of the 500-year flood, including areas of the 500-year flood plain that are protected from the 100-year flood by dike, levee, or other water control structure; areas subject to certain types of 100-year shallow flooding where depths are less than 1.0 foot; or, areas subject to 100-year flooding from sources with drainage areas of less than one square mile. Zone B is not subdivided.
- Zone C: Areas of minimal flooding.

Table 3, "Flood Insurance Zone Data", summarizes the flood elevation differences, FHF's, flood insurance zones, and base flood elevations for each flooding source studied in detail in the county.

5.4 Flood Insurance Rate Map Description

The Flood Insurance Rate Maps for Lonoke County, Arkansas, are, for insurance purposes, the principal result of the Flood Insurance Study. These maps (published separately) contain the official delineation of flood insurance zones and base flood elevation lines. Base flood elevation lines show the locations of the expected whole-foot water surface elevations of the base (100-year) flood. These maps are developed in accordance with the latest flood insurance map preparation guidelines published by the FEMA.

6.0 OTHER STUDIES

In 1977 Flood Hazard Boundary Maps were published for Lonoke County by the FEMA. These maps were used to delineate flood prone areas within the County which were not studied by detailed methods (Reference 8).

FLOODING SOURCE	PANEL ¹	ELEVATION DIFFERENCE ² BETWEEN 1% (100-YEAR) FLOOD AND			FLOOD HAZARD FACTOR	ZONE	BASE FLOOD ELEVATION (FEET NGVD) ³
		10% (10-YEAR)	2% (50-YEAR)	0.2% (500-YEAR)			
Fourmile Creek							
Reach 1	0015, 0020,0040, 0060,0080	-1.37	-0.43	+0.78	015	A3	Varies
Reach 2	0015	-0.67	-0.21	+0.37	010	A2	Varies
Magness Creek							
Reach 1	0015,0020, 0040	-0.89	-0.25	+0.41	010	A2	Varies
Hudson Branch Creek							
Reach 1	0040,0080	-2.02	-0.66	+0.90	020	A4	Varies
Reach 2	0080	-0.43	-0.13	+0.25	005	A1	Varies

¹Flood Insurance Rate Map Panel²Weighted Average³Rounded to Nearest Foot

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

LONOKE COUNTY, AR
(UNINCORPORATED AREAS)

FLOOD INSURANCE ZONE DATA

FOURMILE CREEK, MAGNESS CREEK
HUDSON BRANCH CREEK

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FLOODING SOURCE	PANEL ¹	ELEVATION DIFFERENCE ² BETWEEN 1% (100-YEAR) FLOOD AND			FLOOD HAZARD FACTOR	ZONE	BASE FLOOD ELEVATION (FEET NGVD) ³
		10% (10-YEAR)	2% (50-YEAR)	0.2% (500-YEAR)			
White Oak Branch Reach 1	0055,0060	- 0.74	- 0.19	+ 0.41	005	A1	Varies
Bayou Two Prairie Near Cabot							
Reach 1	0055,0060	- 1.31	- 0.34	+ 0.76	015	A3	Varies
Bayou Two Prairie Tributary Near Cabot							
Reach 1	0060	- 0.45	- 0.13	+ 0.23	005	A1	Varies

¹Flood Insurance Rate Map Panel

²Weighted Average

³Rounded to Nearest Foot

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

LONOKE COUNTY, AR
(UNINCORPORATED AREAS)

FLOOD INSURANCE ZONE DATA

**WHITE OAK BRANCH, BAYOU TWO PRAIRIE NEAR CABOT
BAYOU TWO PRAIRIE TRIBUTARY NEAR CABOT**

FLOODING SOURCE	PANEL ¹	ELEVATION DIFFERENCE ² BETWEEN 1% (100-YEAR) FLOOD AND			FLOOD HAZARD FACTOR	ZONE	BASE FLOOD ELEVATION (FEET NGVD) ³
		10% (10-YEAR)	2% (50-YEAR)	0.2% (500-YEAR)			
North Bayou							
Reach 1	0345,0365	-0.63	-0.18	+0.38	005	A1	Varies
Bayou Two Prairie Near Carlisle							
Reach 1	0195,0215	-1.52	-0.45	+1.00	015	A3	Varies
Bayou Meto							
Reach 1	0130,0135, 0140,0145	-2.68	-0.89	+2.28	025	A5	Varies
Bayou Two Prairie Near Lonoke ⁴							
Reach 2	0170	-1.5	-0.4	+0.9	015	A3	Varies
Pack Branch ⁴							
Reach 1	0170	-0.6	-0.2	+0.4	005	A1	Varies

¹ Flood Insurance Rate Map Panel² Weighted Average³ Rounded to Nearest Foot⁴ Information From City of Lonoke Flood Insurance Study

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

LONOKE COUNTY, AR.

(UNINCORPORATED AREAS)

FLOOD INSURANCE ZONE DATA

NORTH BAYOU, BAYOU TWO PRAIRIE NEAR CARLISLE, BAYOU
METO, BAYOU TWO PRAIRIE NEAR LONOKE, PACK BRANCH

19

In August, 1980, a Flood Insurance Study for the City of Lonoke was completed (Reference 9). Approximate flood boundaries mapped for this County report were checked and adjusted to coincide with the flood boundaries mapped within the City of Lonoke. Profiles for the City study were duplicated and marked to show reach determinations within the County.

This study was coordinated with the Flood Insurance Study for Pulaski County, Arkansas, which had not been completed by the completion date of this report.

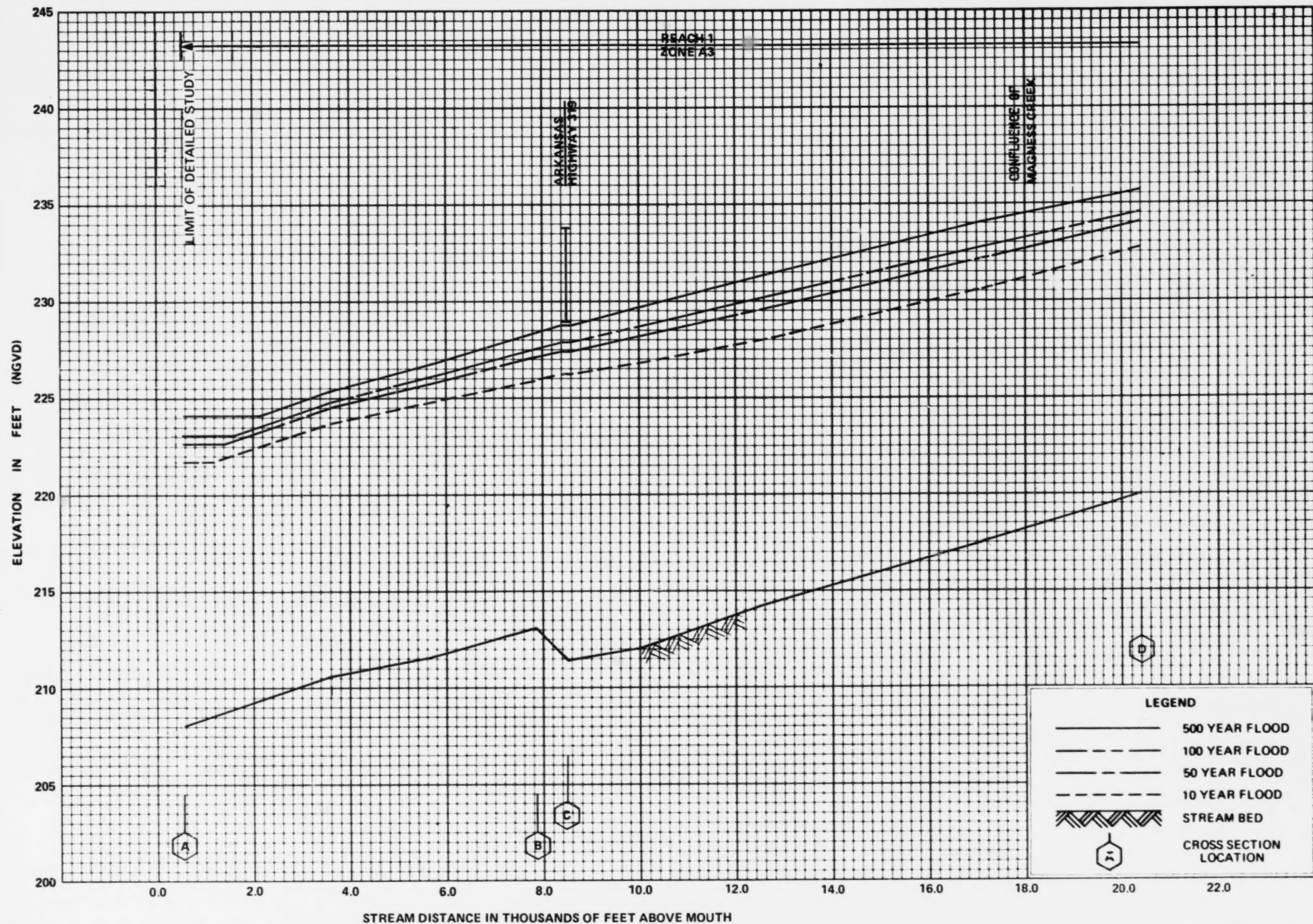
The maps and profiles for Bayou Meto were checked for reasonableness with the Jacksonville, Arkansas Flood Plain Information Report (Reference 10).

7.0 LOCATION OF DATA

Survey, hydrologic, hydraulic, and other pertinent data used in this study can be obtained by contacting the office of the Chief, Natural and Technological Hazards Division, Federal Emergency Management Agency, Federal Center, Denton, Texas 76201.

8.0 BIBLIOGRAPHY AND REFERENCES

1. U. S. Census Bureau, 1980 Population Census.
2. Climatological Data Annual Summary, Arkansas, 1976, National Oceanic and Atmospheric Administration, National Climatic Center, Asheville, North Carolina, 1977.
3. U. S. Department of Agriculture, Soil Conservation Service, General Soil Map, Lonoke County, Arkansas, 1971.
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5. U. S. Weather Bureau Rainfall Frequency Atlas of the United States, Technical Paper No. 40, Washington, D. C., 1961.
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7. U. S. Army Corps of Engineers, Computer Program 723-X6-L202A HEC-2 Water Surface Profiles, Hydrologic Engineering Center, Davis, California, August 1979.
8. U. S. Department of Housing and Urban Development, Flood Hazard Boundary Maps for Lonoke County, Arkansas, August 1977.
9. Flood Insurance Study for City of Lonoke, Lonoke County, Arkansas, Federal Emergency Management Agency (Preliminary Stage).
10. Flood Plain Information, Bayou Meto and Tributaries, Jacksonville, Arkansas, U. S. Army Corps of Engineers, Vicksburg District, August 1973.

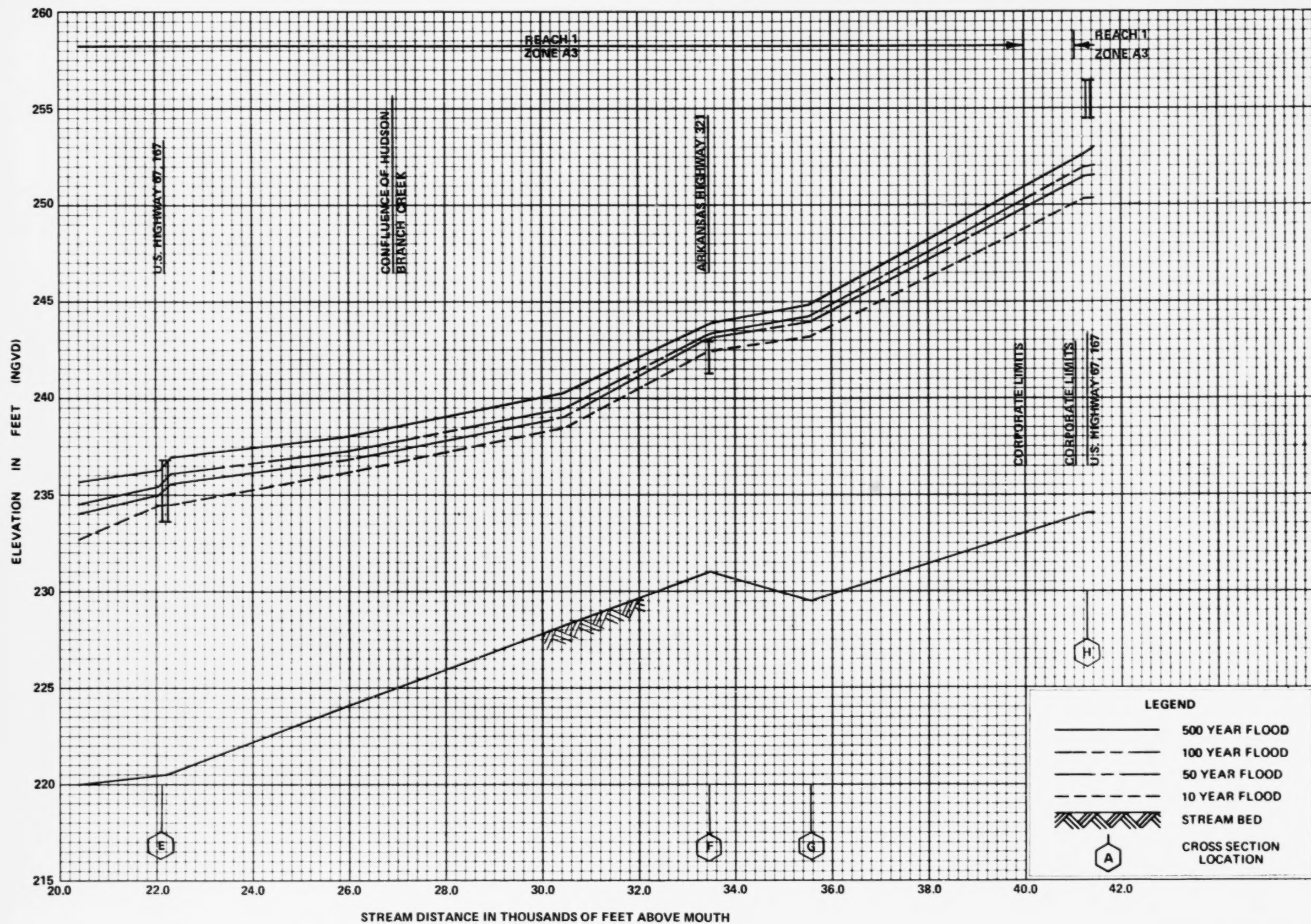


FLOOD PROFILES
FOURMILE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

LONOKE COUNTY, AR
(UNINCORPORATED AREAS)

01P

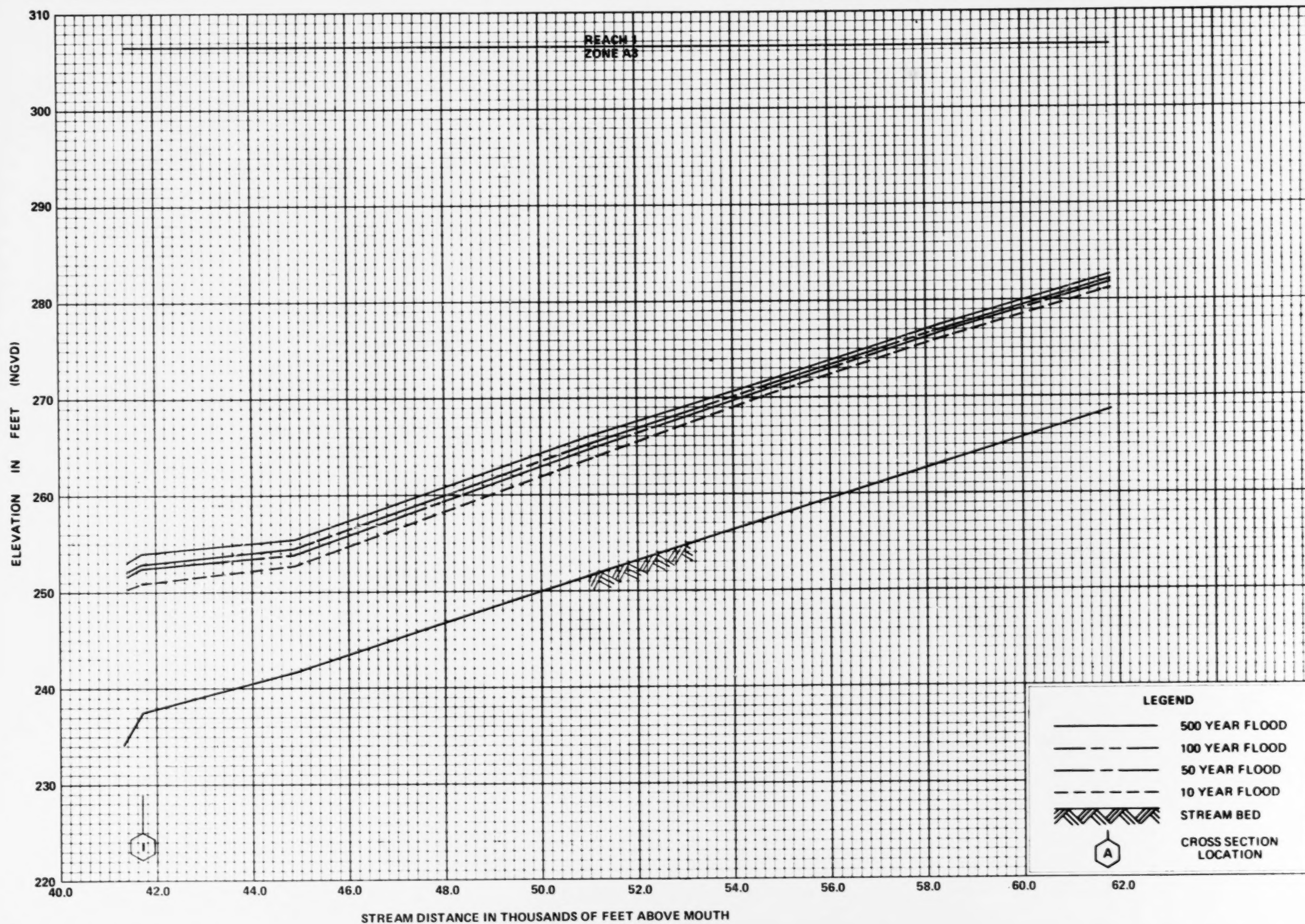


FLOOD PROFILES
FOURMILE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

LONEKE COUNTY, AR
(UNINCORPORATED AREAS)

02P



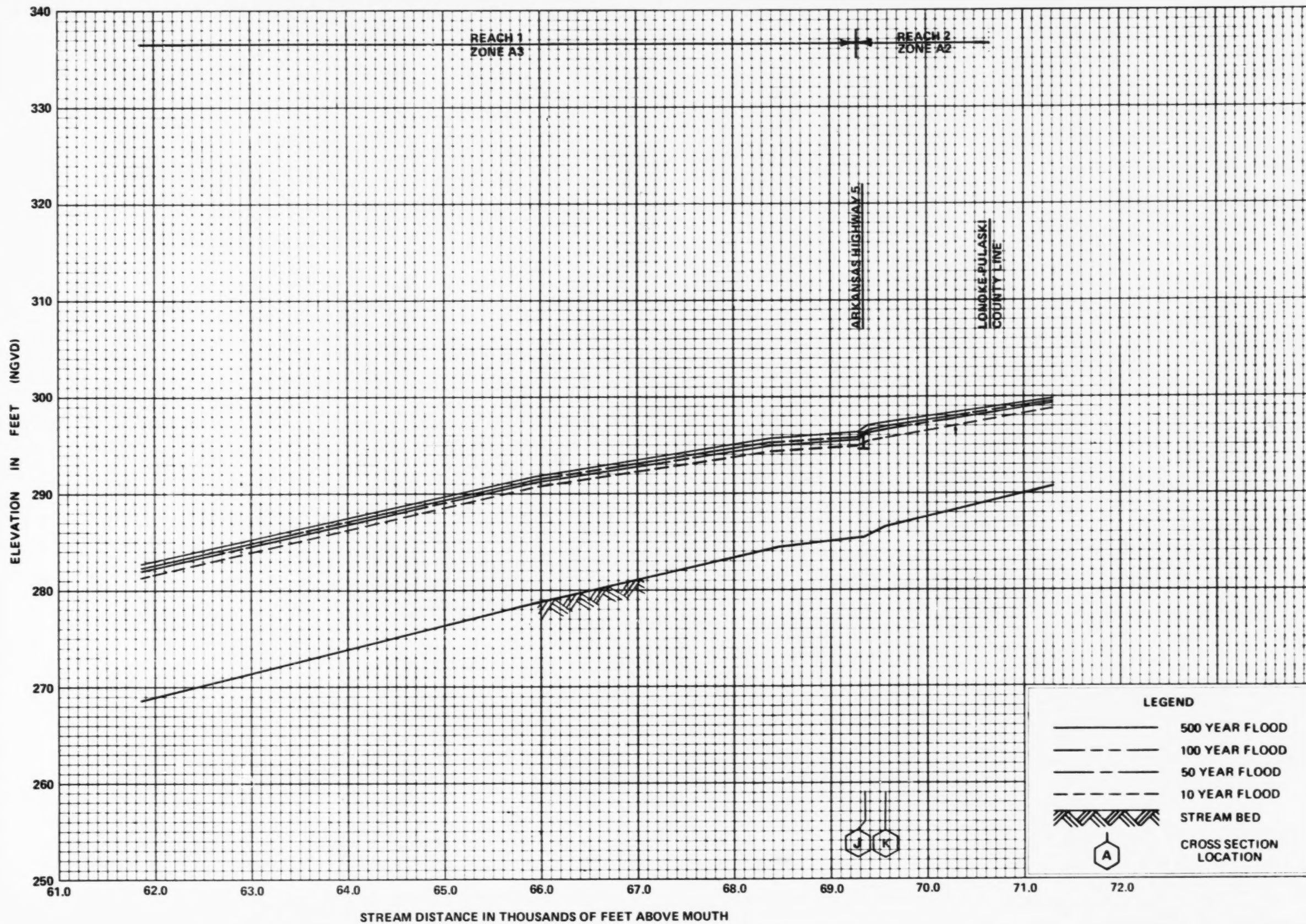
FLOOD PROFILES

FOURMILE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

LONOKE COUNTY, AR
(UNINCORPORATED AREAS)

03P



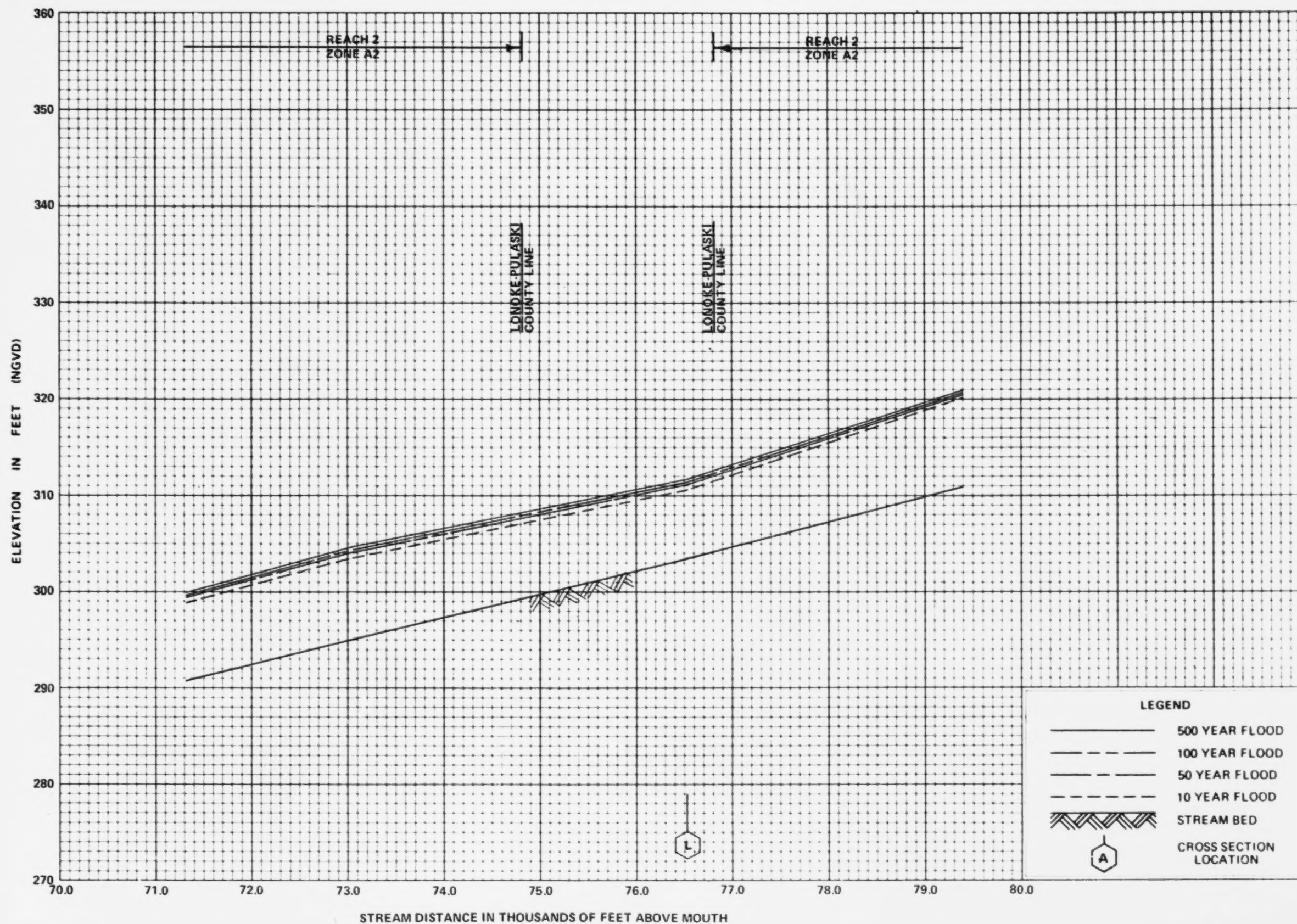
FEDERAL EMERGENCY MANAGEMENT AGENCY

FLOOD PROFILES

LONOKE COUNTY, AR
(UNINCORPORATED AREAS)

FOURMILE CREEK

04P



FLOOD PROFILES

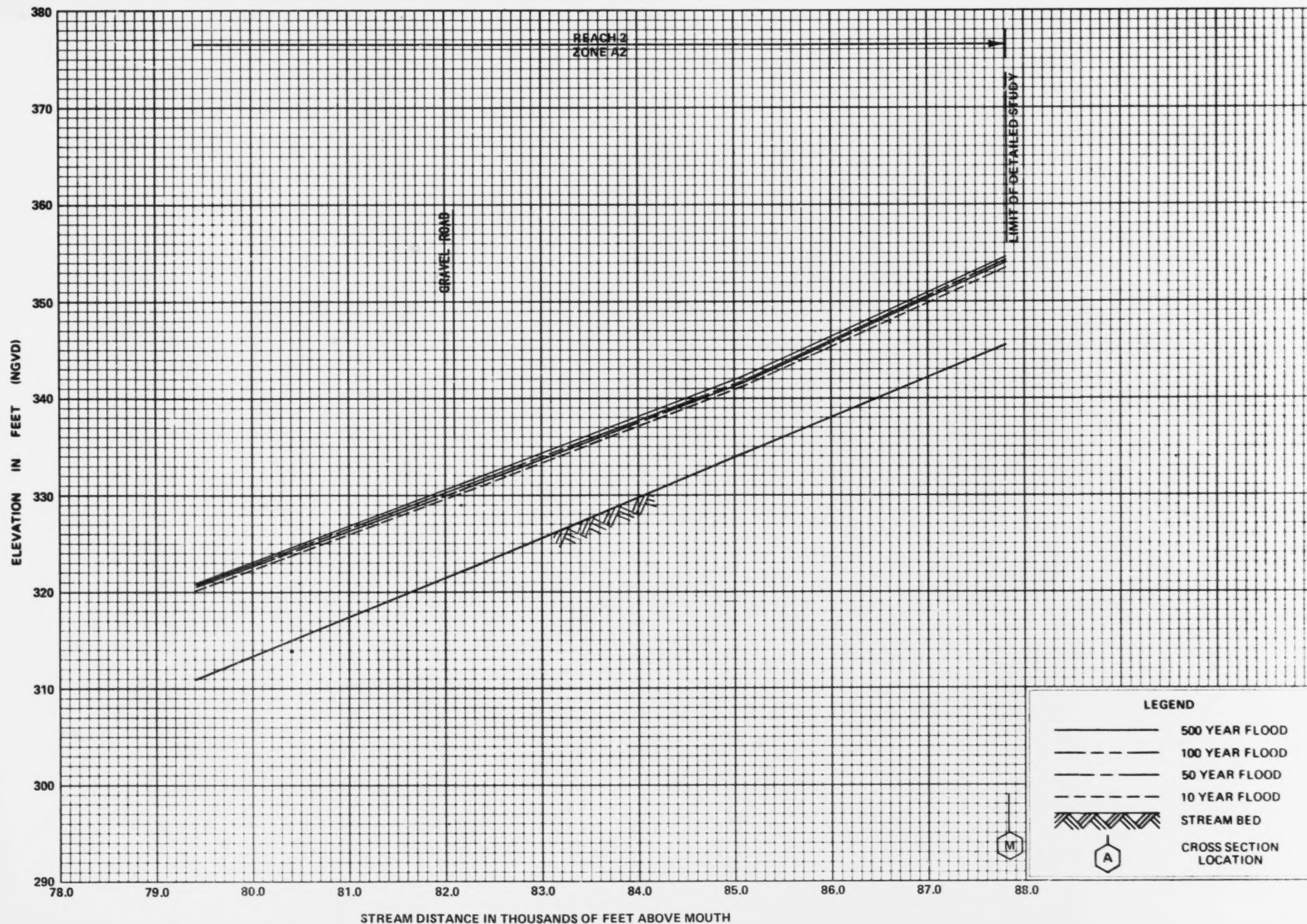
FOURMILE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

LONOKE COUNTY, AR
(UNINCORPORATED AREAS)

05P

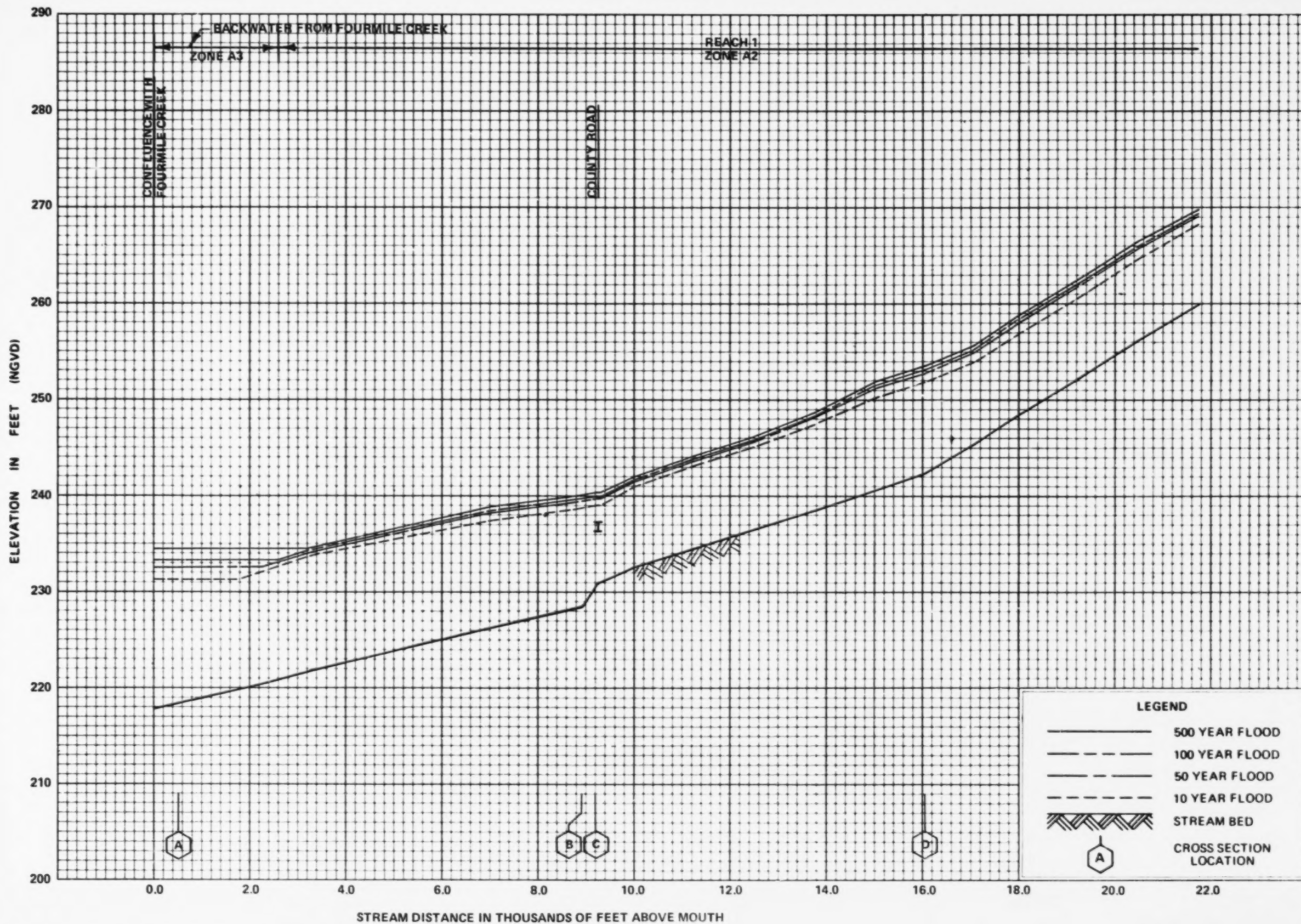
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FLOOD PROFILES
FOURMILE CREEK

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LONOKE COUNTY, AR
(UNINCORPORATED AREAS)

06P



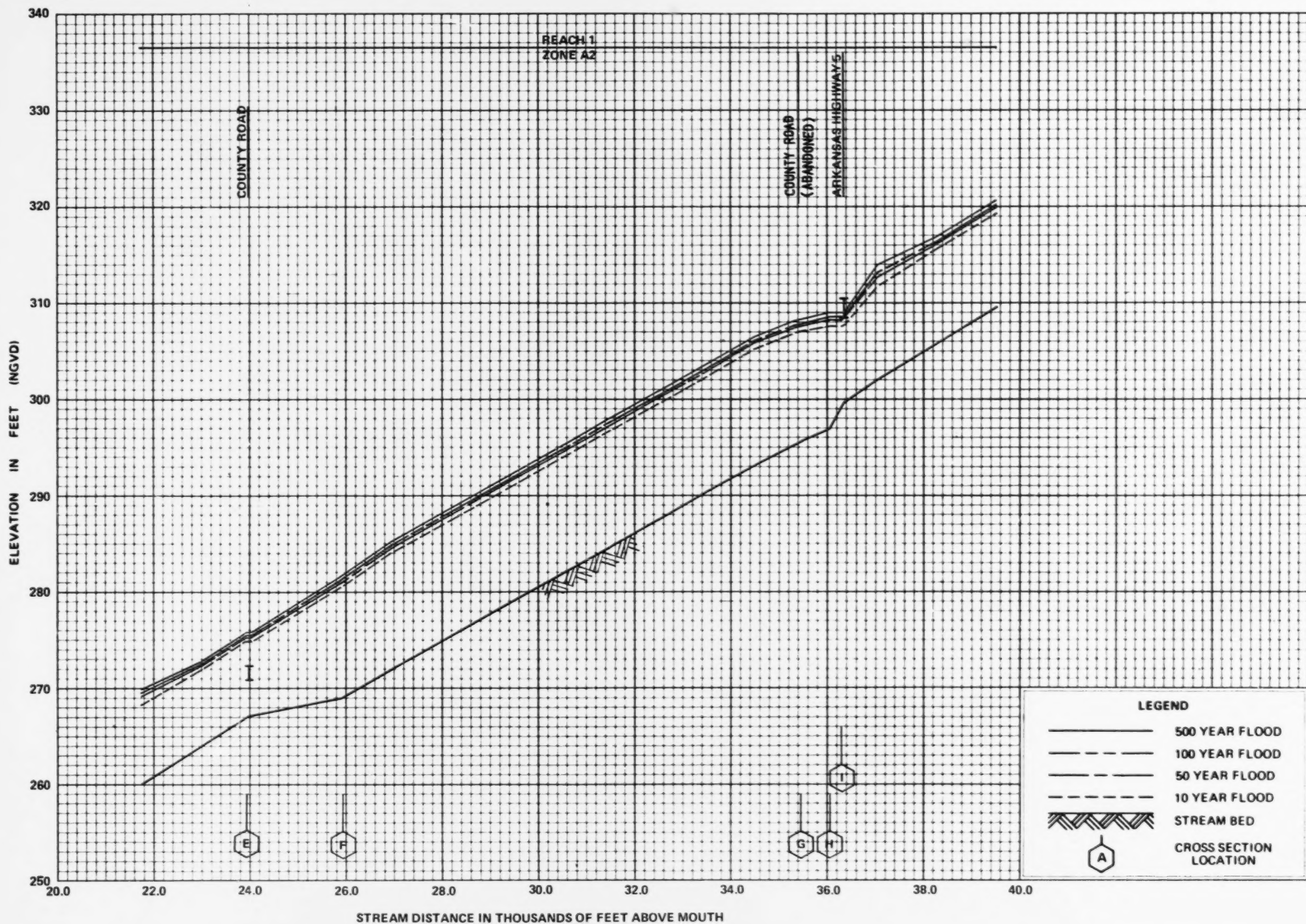
FLOOD PROFILES

MAGNESS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

LONOKE COUNTY, AR
(UNINCORPORATED AREAS)

07P



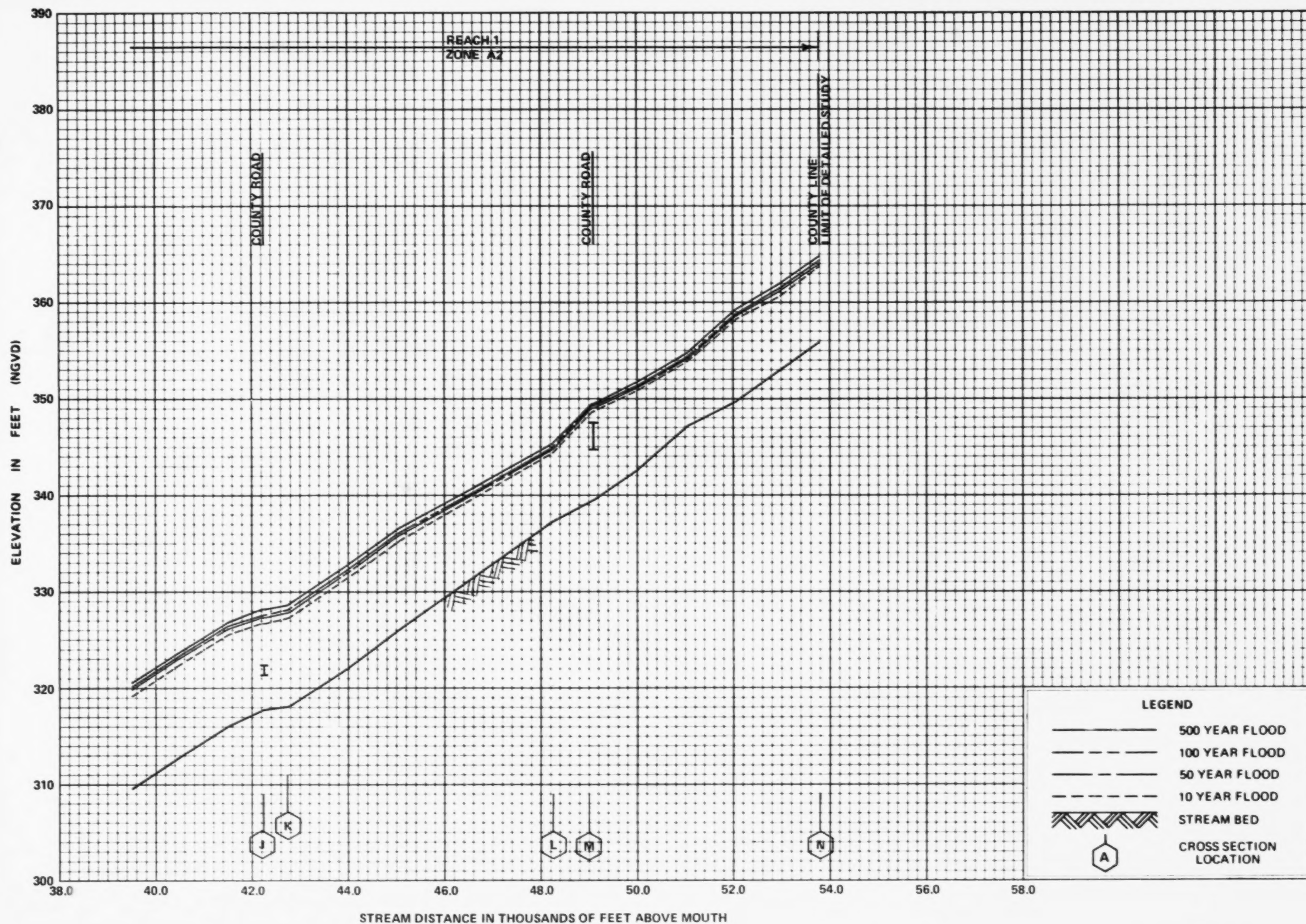
FEDERAL EMERGENCY MANAGEMENT AGENCY

FLOOD PROFILES

MAGNESS CREEK

LONOKE COUNTY, AR
 (UNINCORPORATED AREAS)

08P

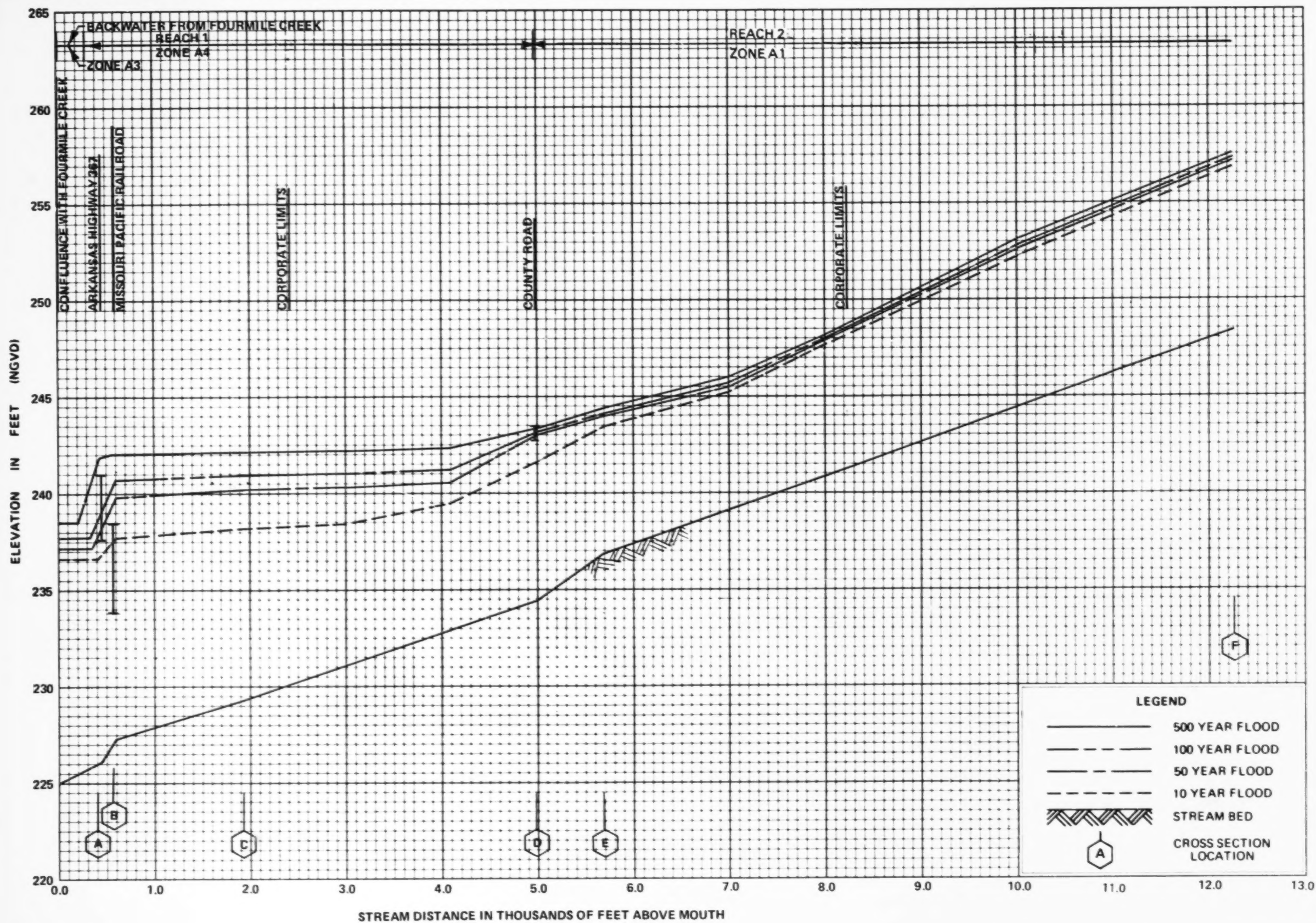


FLOOD PROFILES
MAGNESS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

LONKE COUNTY, AR
(UNINCORPORATED AREAS)

09P



FLOOD PROFILES

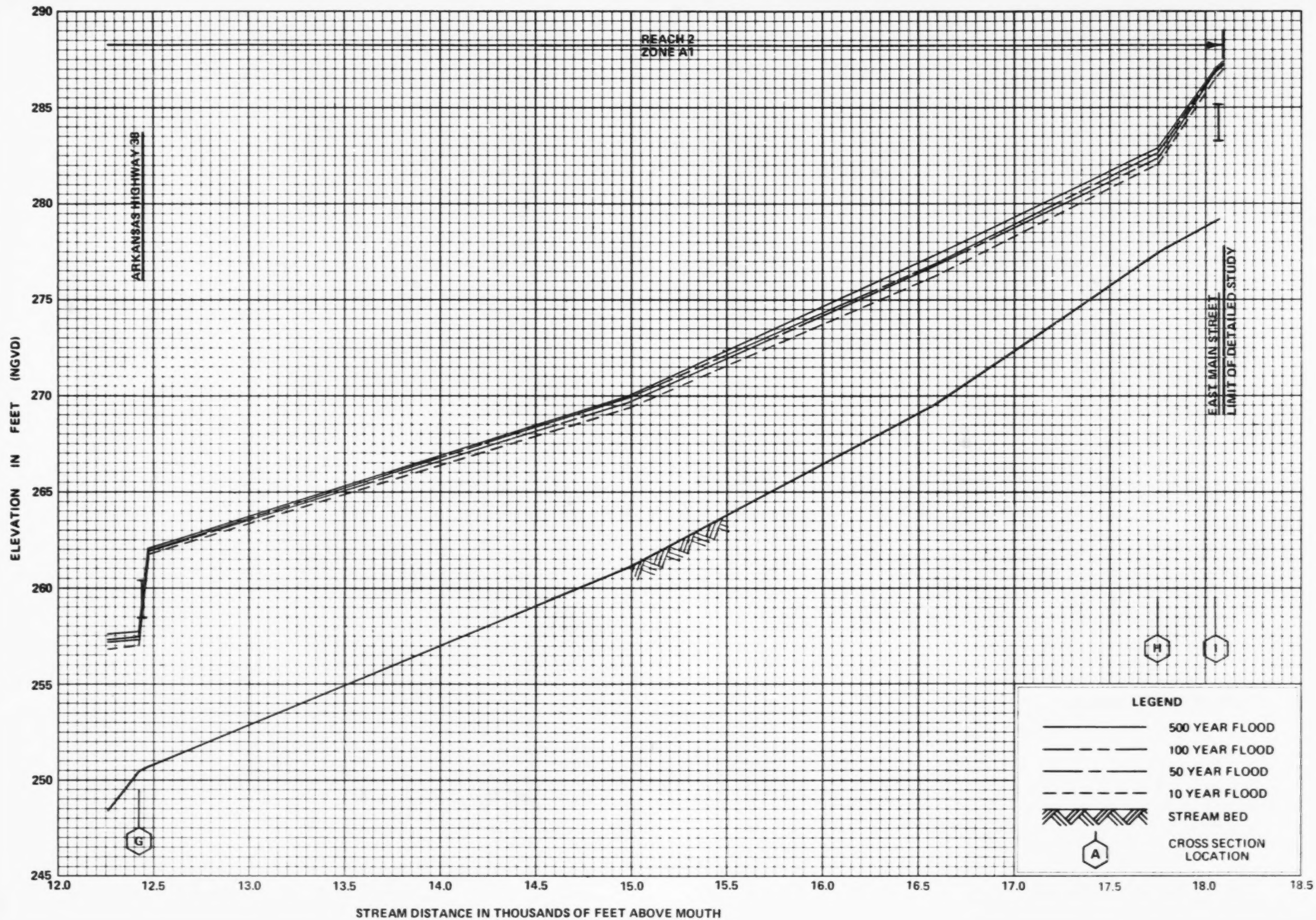
HUDSON BRANCH CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

LONOKE COUNTY, AR
(UNINCORPORATED AREAS)

10P

BEST DOCUMENT AVAILABLE



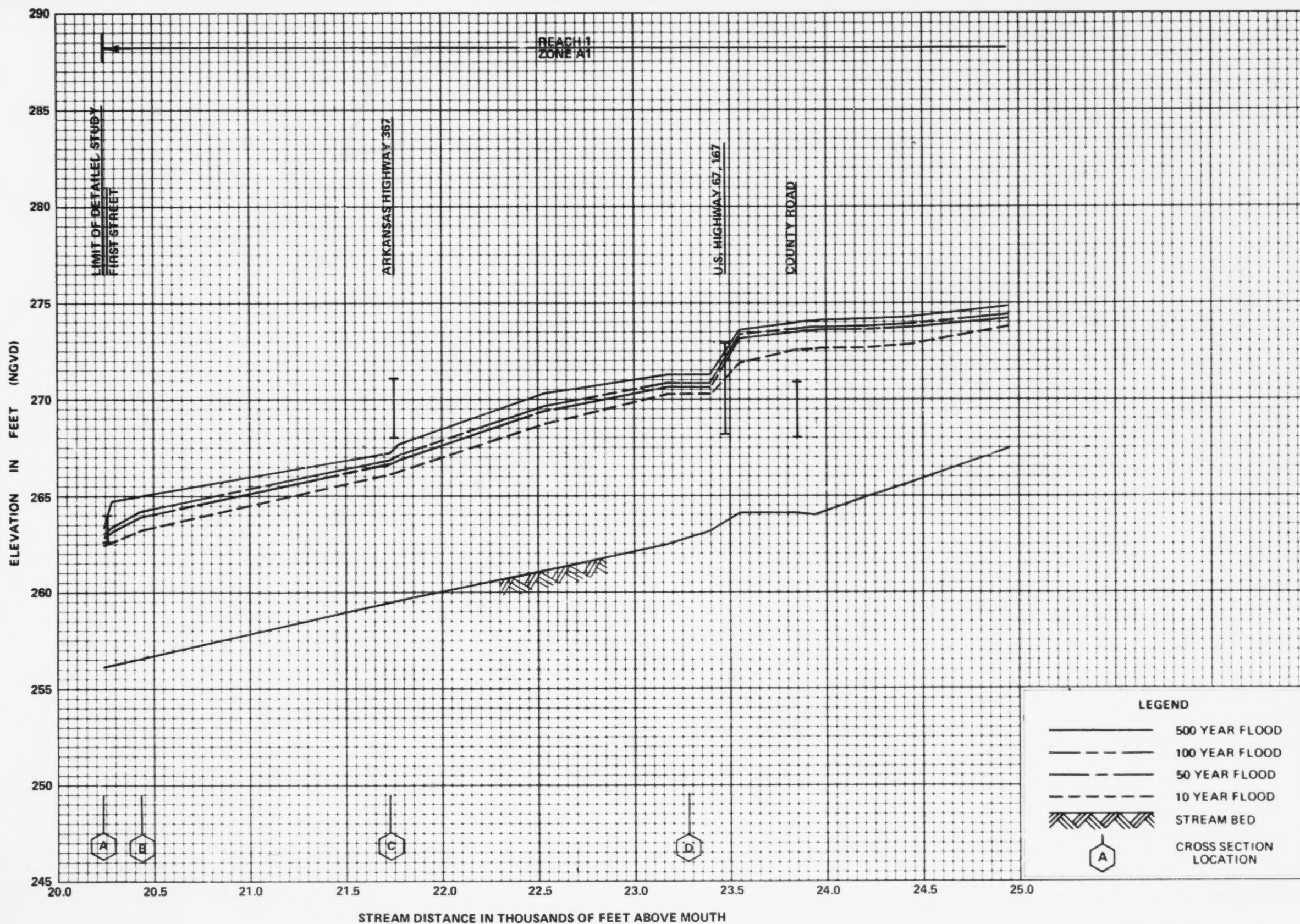
FLOOD PROFILES

HUDSON BRANCH CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

LONGKE COUNTY, AR
 (UNINCORPORATED AREAS)

11P



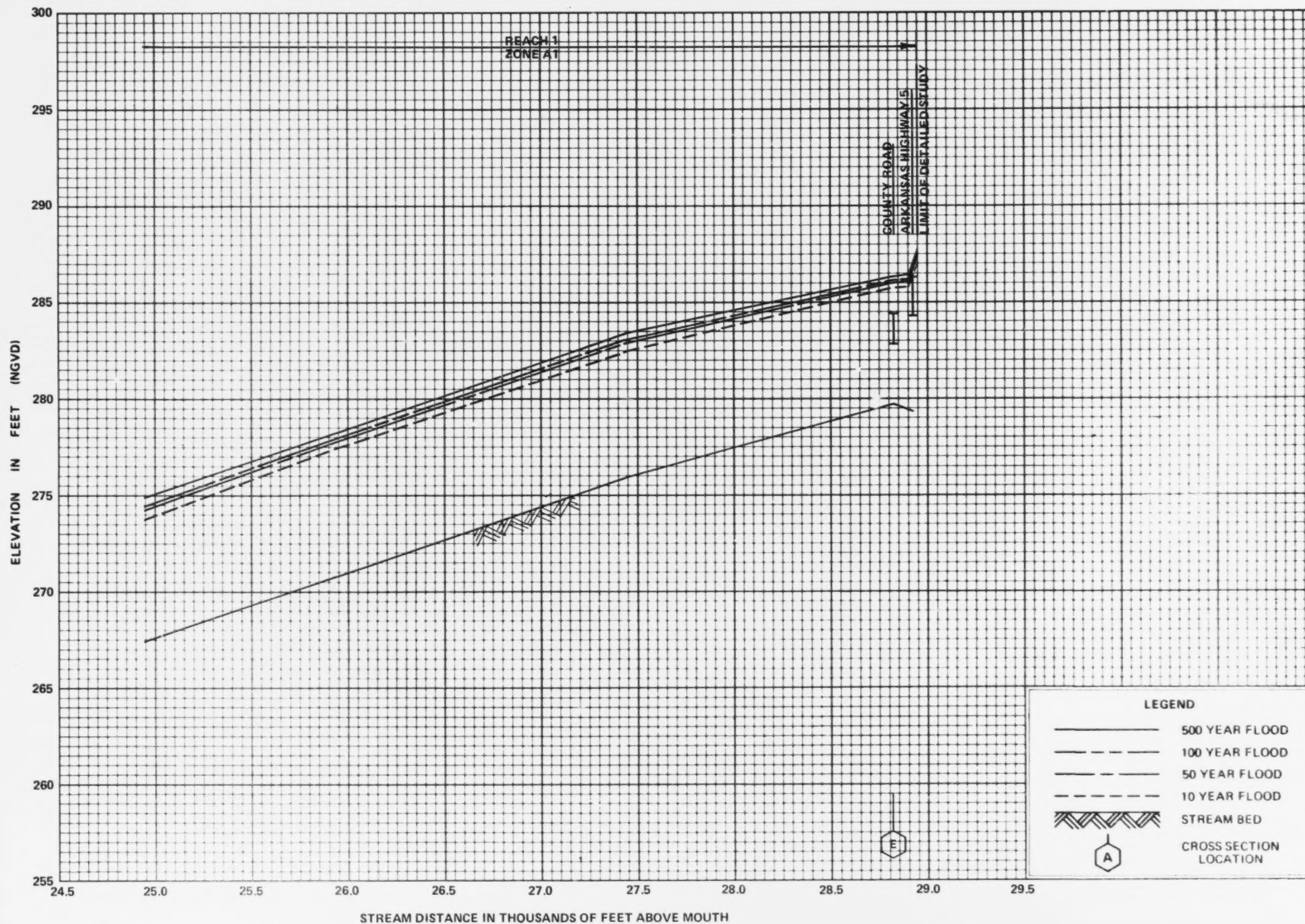
FLOOD PROFILES

WHITE OAK BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

LONOKE COUNTY, AR
(UNINCORPORATED AREAS)

12P



FLOOD PROFILES

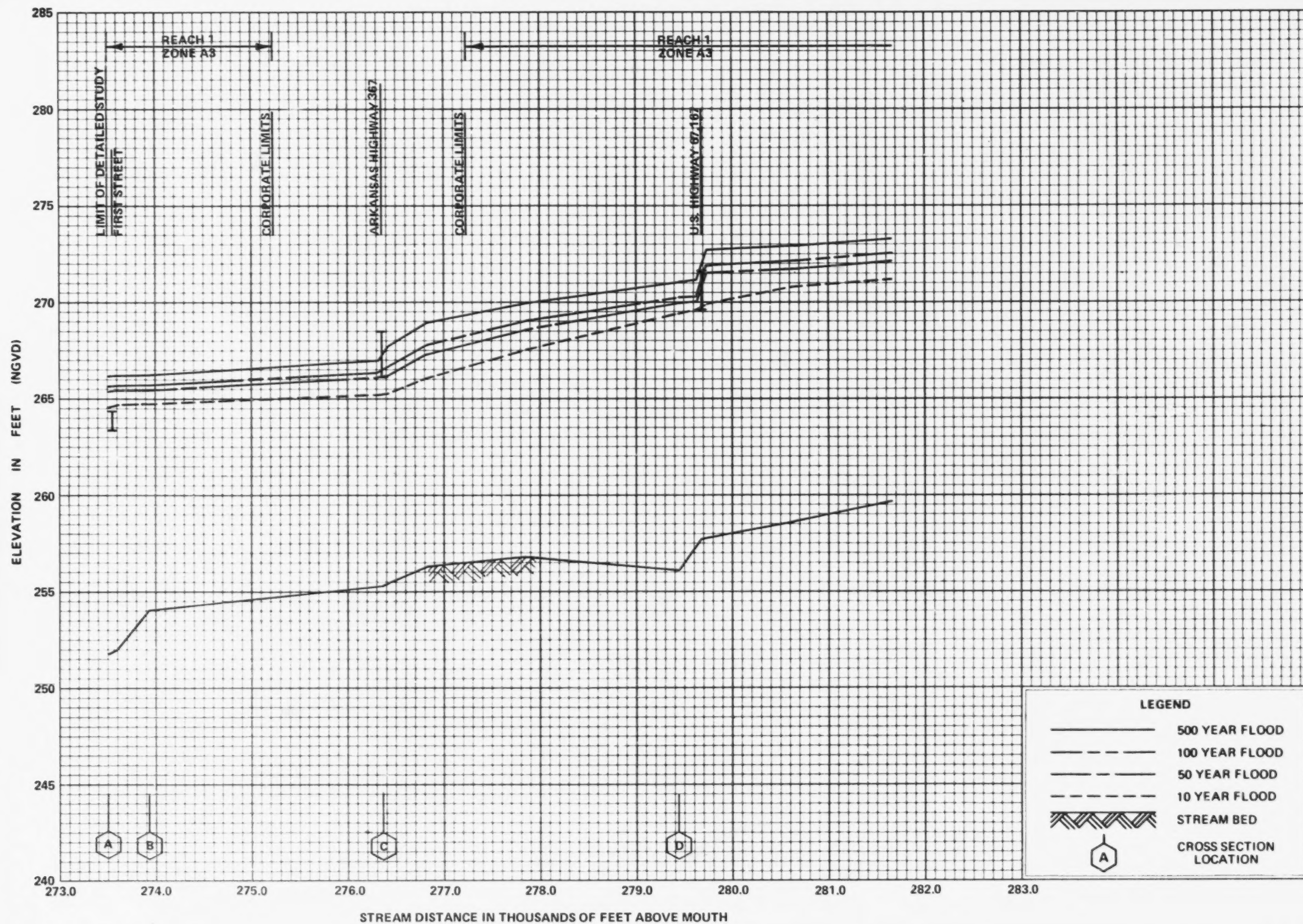
WHITE OAK BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

LONOKE COUNTY, AR
(UNINCORPORATED AREAS)

13P

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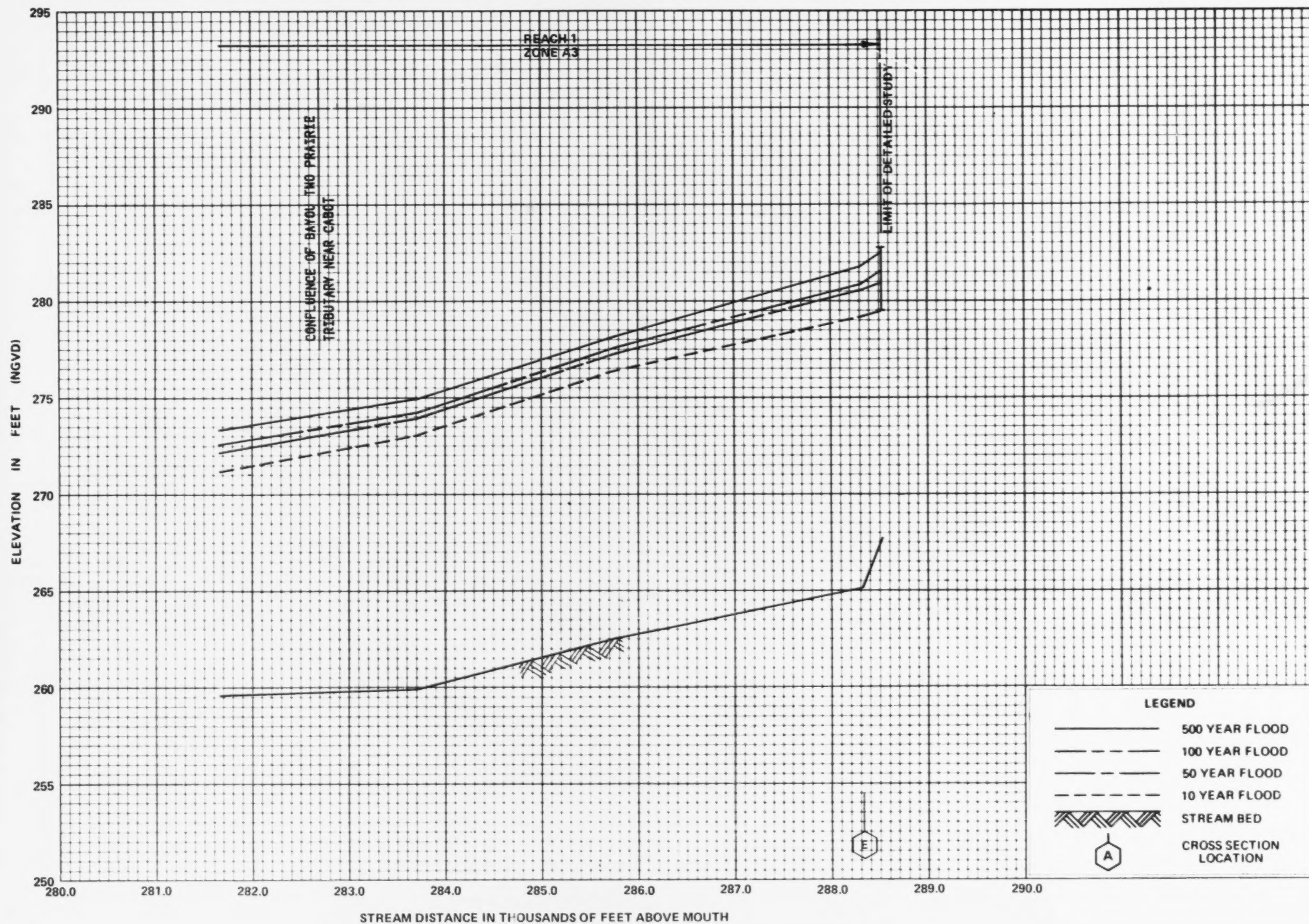


FEDERAL EMERGENCY MANAGEMENT AGENCY

FLOOD PROFILES

LONKE COUNTY, AR
(UNINCORPORATED AREAS)

BAYOU TWO PRAIRIE NEAR CABOT



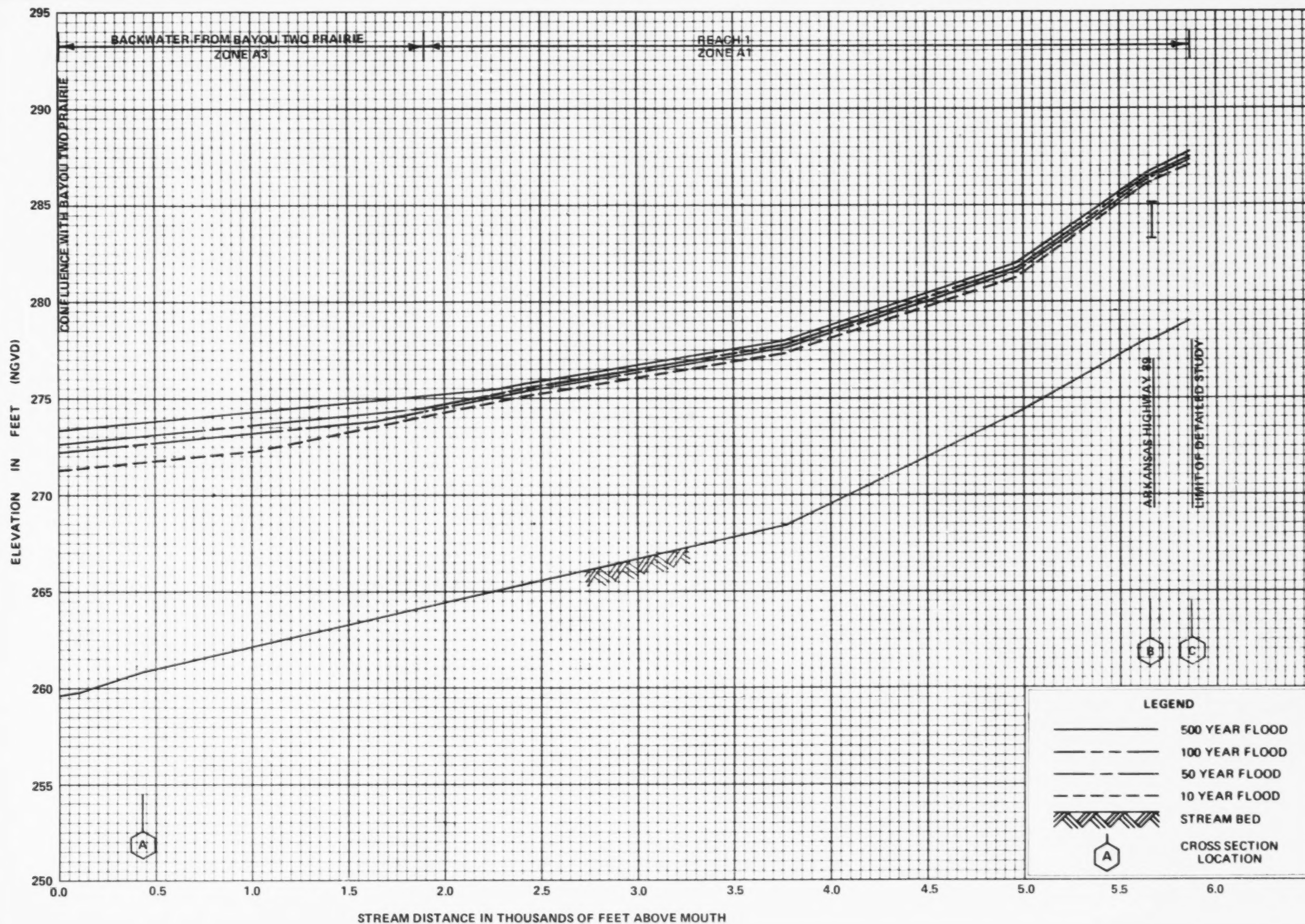
FEDERAL EMERGENCY MANAGEMENT AGENCY

FLOOD PROFILES

LONOKE COUNTY, AR
(UNINCORPORATED AREAS)

BAYOU TWO PRAIRIE NEAR CABOT

15P



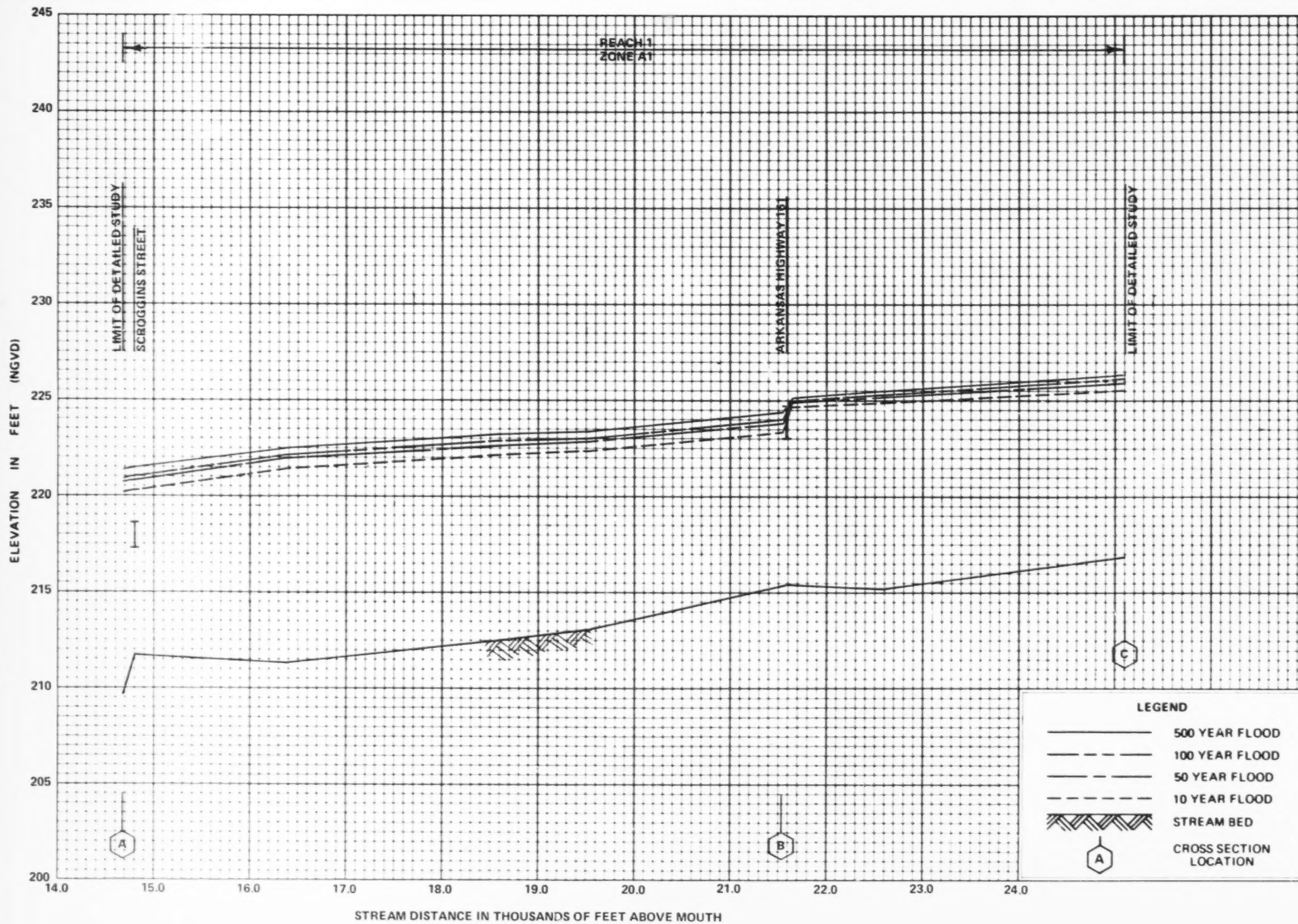
FEDERAL EMERGENCY MANAGEMENT AGENCY

FLOOD PROFILES

LONOKE COUNTY, AR
(UNINCORPORATED AREAS)

BAYOU TWO PRAIRIE TRIBUTARY NEAR CABOT

16P



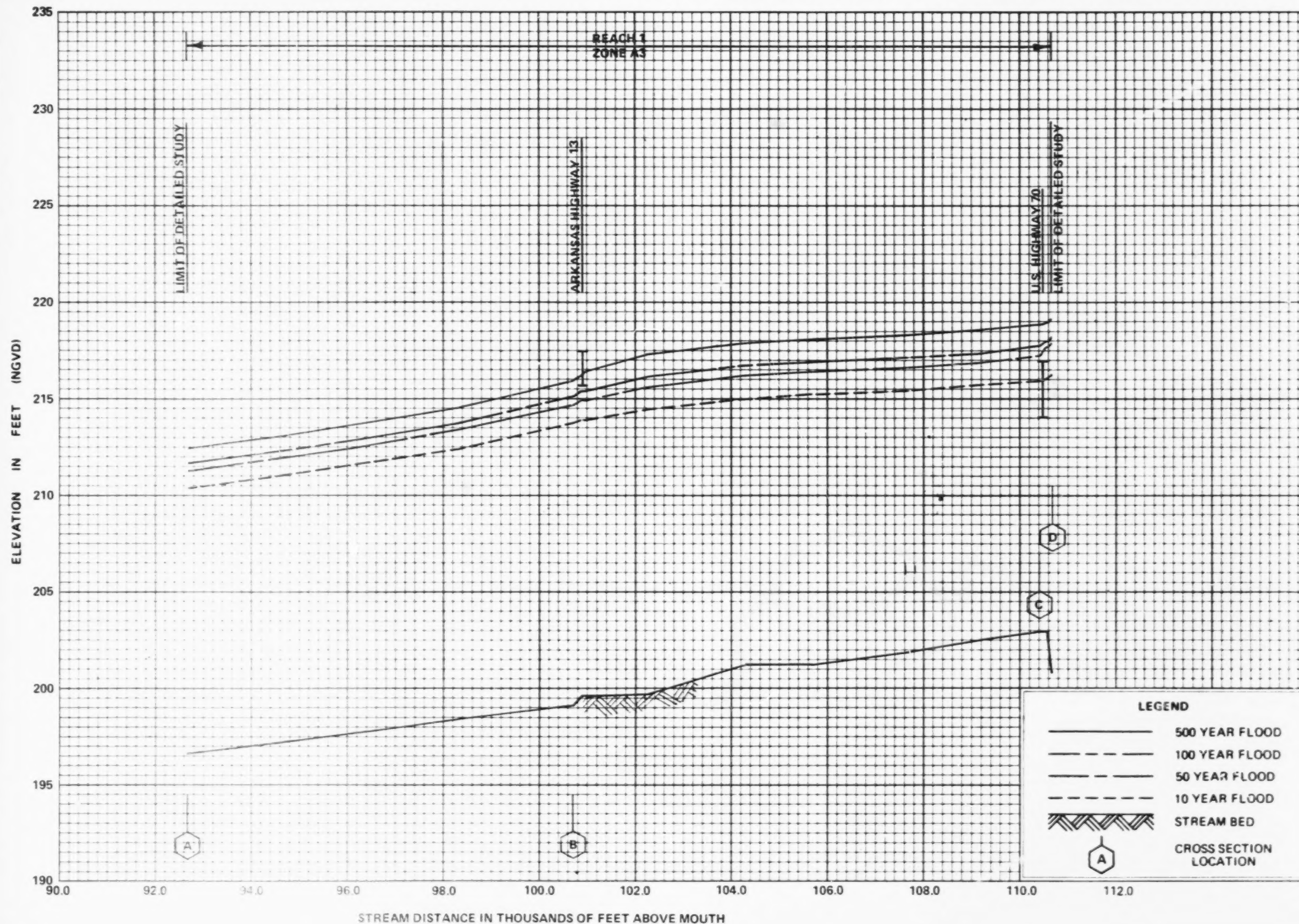
FLOOD PROFILES

NORTH BAYOU

FEDERAL EMERGENCY MANAGEMENT AGENCY

LONGKE COUNTY, AR
(UNINCORPORATED AREAS)

17P



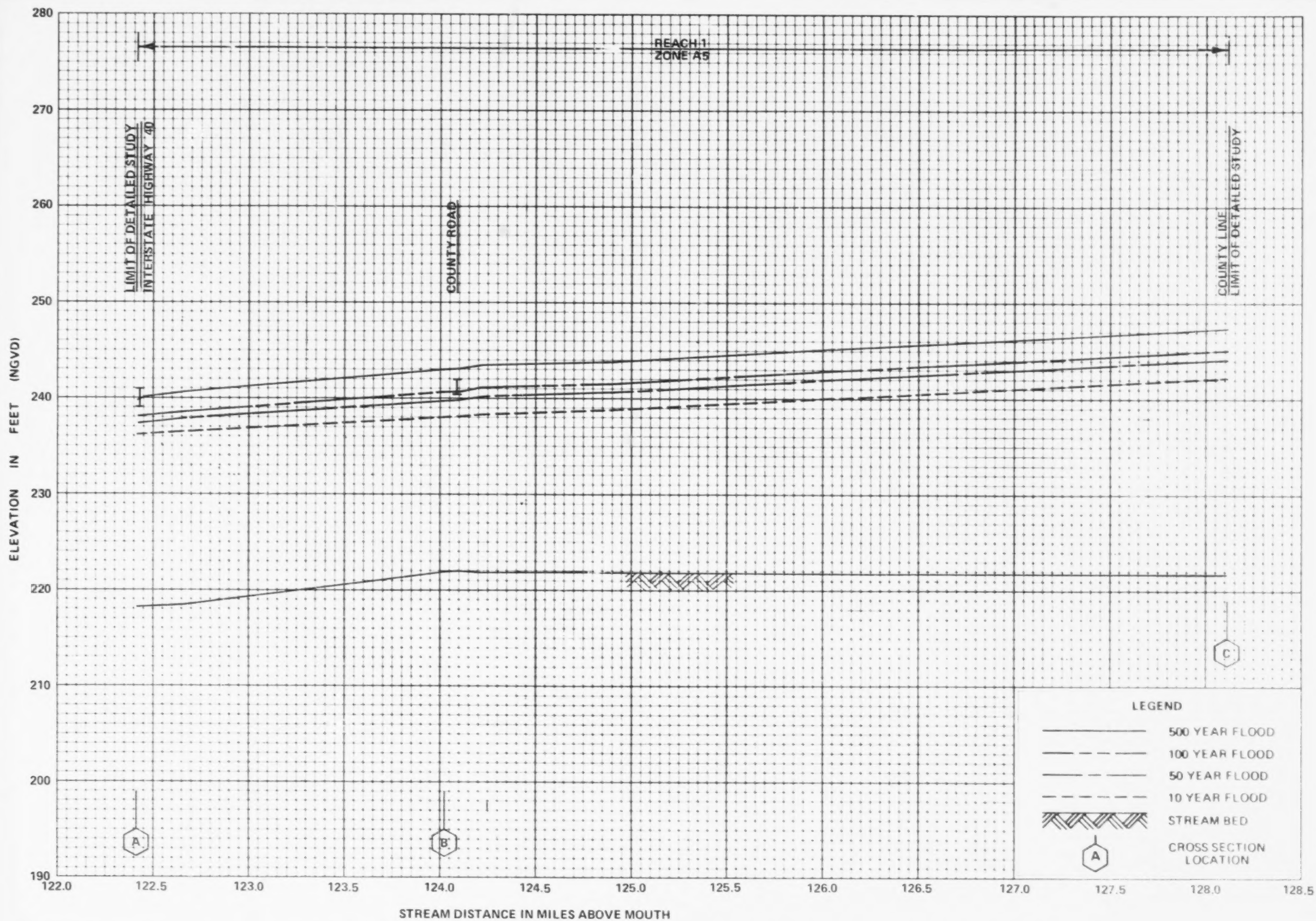
FEDERAL EMERGENCY MANAGEMENT AGENCY

FLOOD PROFILES

LONOKE COUNTY, AR
(UNINCORPORATED AREAS)

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18P



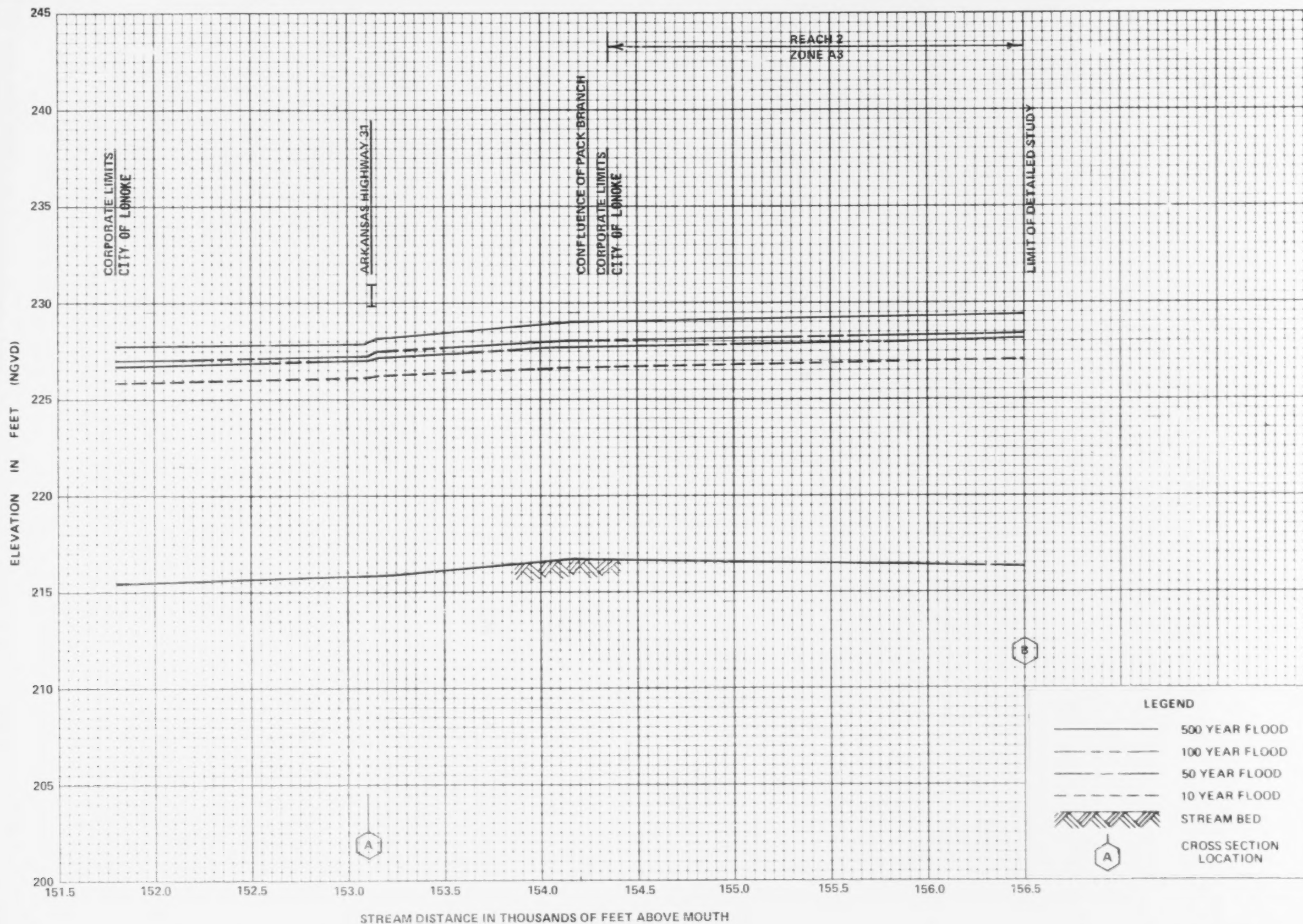
FLOOD PROFILES

BAYOU METO

FEDERAL EMERGENCY MANAGEMENT AGENCY

LONOKE COUNTY, AR
(UNINCORPORATED AREAS)

19P



FEDERAL EMERGENCY MANAGEMENT AGENCY

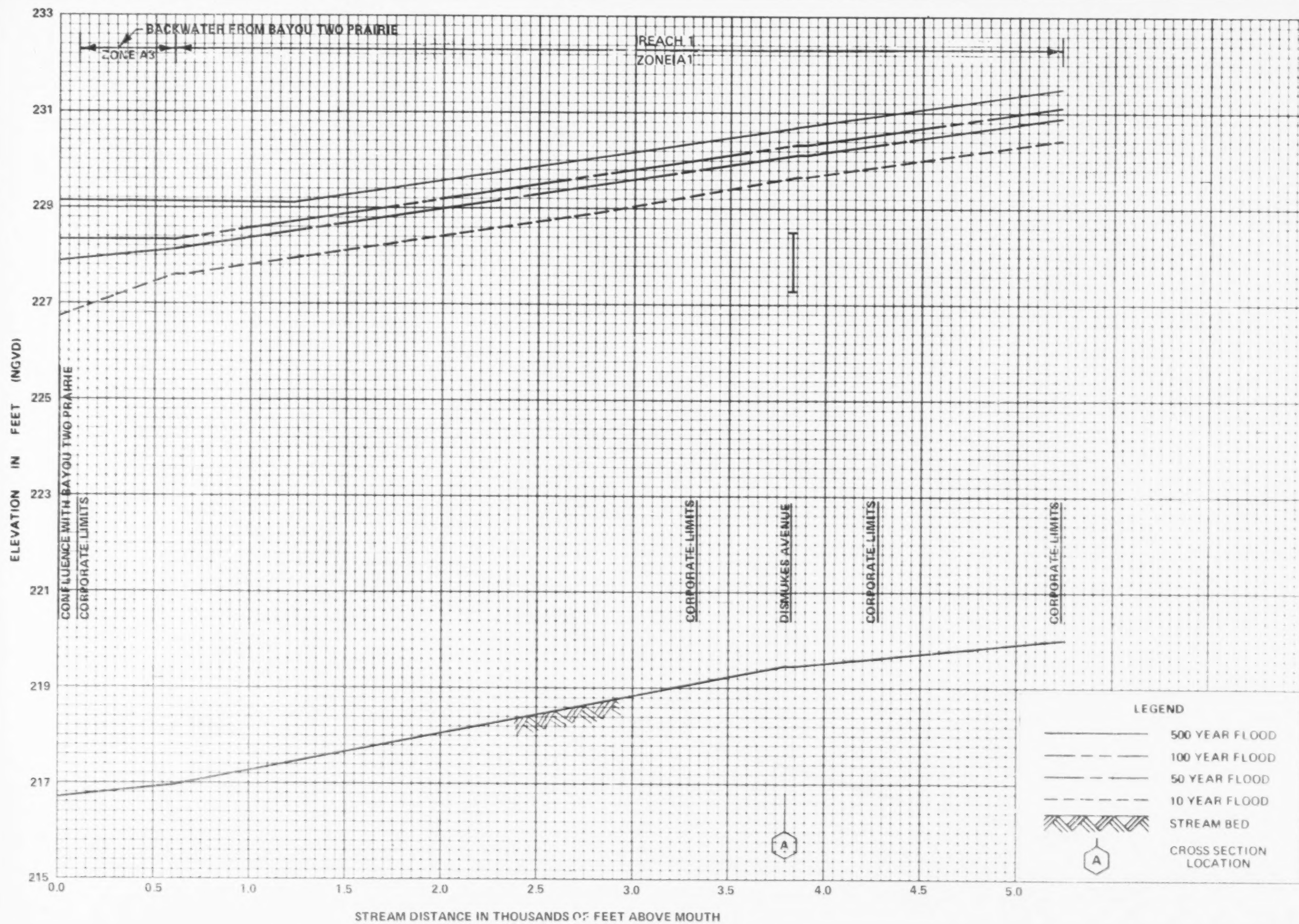
FLOOD PROFILES

LONOKE COUNTY, AR
(UNINCORPORATED AREAS)

BAYOU TWO PRAIRIE NEAR LONOKE

20P

BEST DOCUMENT AVAILABLE



FLOOD PROFILES

PACK BRANCH

FEDERAL EMERGENCY MANAGEMENT AGENCY

LONOKE COUNTY, AR
(UNINCORPORATED AREAS)

21P